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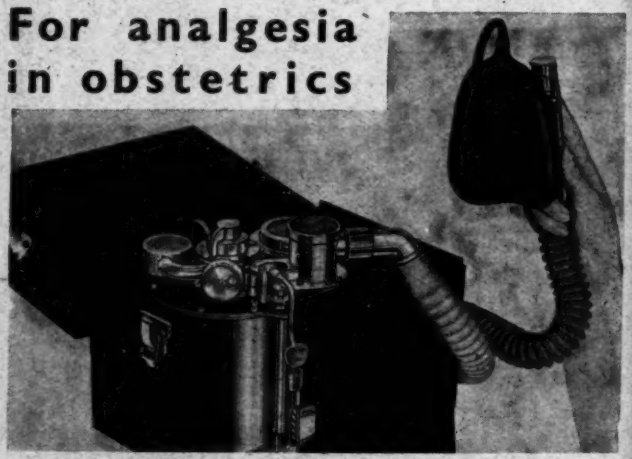

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BRITISH MEDICAL JOURNAL

LONDON SATURDAY MAY 6 1950

THE WORLD HEALTH ORGANIZATION

BY

BROCK CHISHOLM, C.B.E., M.D.

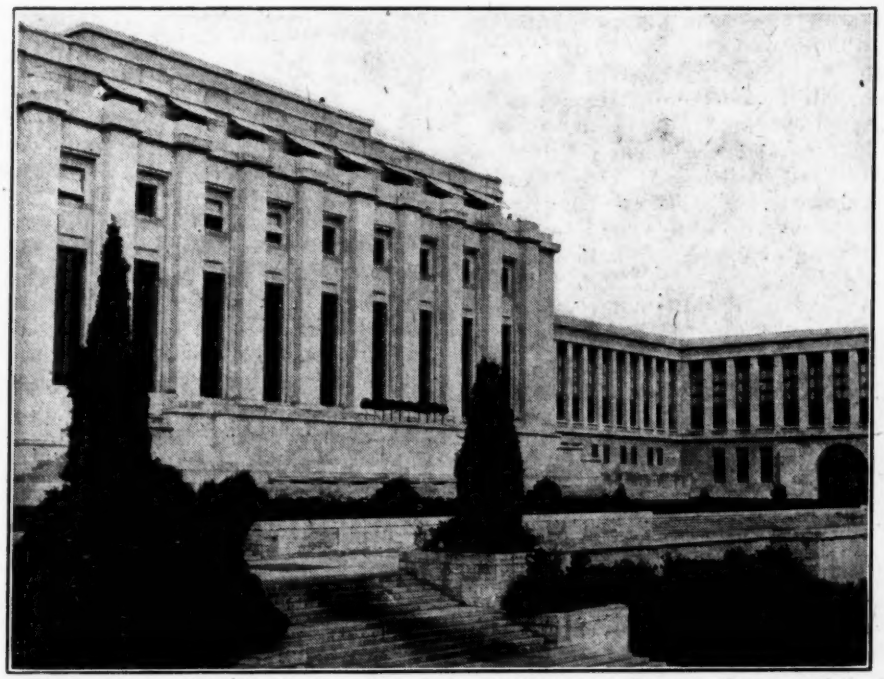
Director-General, World Health Organization

Constitution, Aims, and Scope of Its Work

In September, 1948, the World Health Organization, the youngest of the United Nations agencies, officially came into being. The date will undoubtedly go down as an important landmark in the history of international co-operation in the field of public health. Indeed, with the creation of W.H.O., various attempts, covering a span of more than 50 years, to establish a single world-wide system which would answer the world's critical health needs were brought to a successful conclusion.

The Constitution on which W.H.O. is built, and which was drafted at the International Health Conference in June–July, 1946, in New York, bears witness to the revolutionary character of the new agency.

One of the basic features expressed in that document is the recognition of the facts that total solidarity and action are necessary to gain for all people "the highest possible level of health"; that health, like security and peace, is indivisible; and that no person, no nation, can be considered safe while disease still exists in any part of the globe. This concept of universality, reflected in the term "world" in the title of the Organization, is also one of the characteristics which distinguish W.H.O. from previous co-operative efforts to fight disease. Unlike them, W.H.O. intends to solve health problems on a world-wide basis, because the nations of the world should realize that in modern conditions only completely united action could provide adequate answers to those problems.



Headquarters of W.H.O.—A view of the Palais des Nations at Geneva. The part of the building shown is that used for conferences. The Palais des Nations is the Geneva Office of the United Nations, and houses not only W.H.O. but other international agencies. The First World Health Assembly in 1948 was held at the Palais des Nations, and the Third Assembly will open in this building on May 8 this year.

Another guiding principle of W.H.O. can be found in its definition of the word "health." "Health," the Constitution declares, "is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity." Such a statement provides a clear indication of the breadth and concept of public health which W.H.O. is called upon to translate into action. It opens new and larger avenues for the work of the experts joined together in the Organization to raise the health standards of the peoples of the world. There can be no longer any question of purely defensive and limited barricades in the fight against disease. Gone are the days when the activities of the international health officer were limited to quarantine measures and immunization. His approach to-day must be a positive one, an aggressive one, which recognizes the close relationship between international health problems on the one hand and economic and social conditions on the other hand.

The specific inclusion in the Constitution of responsibility in the fields of mental hygiene, nutrition, medical care, and environmental sanitation, etc., demonstrates a wider conception of public health than has been promulgated heretofore. The definition embodied in the Constitution cannot become a reality unless W.H.O. tackles with courage, and in co-operation with the U.N. and other agencies as well as various other non-governmental organizations, the basic problems responsible for maladies yesterday and to-day—namely, those of mental, social, and economic misery.

On the basis of this conception of health the scope of activities laid down for W.H.O. by its Constitution goes far beyond the work done by the previous organizations. Thus W.H.O. is empowered as follows :

To assist Governments, upon request, in strengthening health services.

To promote improved standards of teaching and training in the health, medical, and related professions.

To provide information, counsel, and assistance in the field of health.

To promote, in co-operation with other specialized agencies where necessary, the improvement of nutrition, housing, sanitation, recreation, economic or working conditions, and other aspects of environmental hygiene.

To promote co-operation among scientific and professional groups which contribute to the advancement of health.

To promote maternal and child health and welfare and to foster the ability to live harmoniously in a changing total environment.

To foster activities in the field of mental health, especially those affecting the harmony of human relations.

To promote and conduct research in the field of health.

To study and report on, in co-operation with other specialized agencies where necessary, administrative and social techniques affecting public health and medical care from preventive and curative points of view, including hospital services and social security.

The third principle essential for the understanding of W.H.O. is related to its role in the battle for better health. W.H.O. was not established as a supranational health administration to take the place of national health authorities in the carrying out of their normal functions. It was created to help those authorities directly, by putting at their disposal the knowledge and the skills needed for the improvement of their own health services, and, indirectly, by mobilizing all available resources for the solution of problems which lend themselves to international action. This double task, assigned to W.H.O. by its Constitution, is a logical sequence to the principle of universality it embodies, and should make it possible for all people to share in the benefits of medical and sanitary sciences, which until now have been provided to only a relatively limited number of nations.

Finally, the principle of regionalization, which guides the Organization in the carrying out of its role as "the directing and co-ordinating authority on international health work," must be regarded as a basic tenet of W.H.O.'s philosophy. Regionalization is, indeed, defined as the only practical way in which the Organization can adequately meet the differing health needs of the various areas throughout the world. The importance of establishing regional offices, through which the assistance given by the Organization can be adapted to the conditions prevailing in individual countries, as well as to their specific requirements, was emphasized at the very inception of W.H.O. The implementation of this principle was begun in 1949, and has been one of the main concerns of the Organization ever since.

W.H.O. Interim Commission

It is hardly possible to overestimate the importance of the work accomplished by the Interim Commission during the two years which intervened between the signing of the Constitution in July, 1946, and its coming into effect in the summer of 1948. By ensuring continuity of the functions of previous international health organizations, by giving assistance in the solution of urgent national health problems, and, finally, by preparing a framework for future international action in the field of health, the 18-member Commission set a pattern for the permanent Organization. A few indications will suffice to show how effectively the Commission carried out the numerous tasks assigned to it.

Within a few months after its appointment the W.H.O. Interim Commission assumed responsibility for the epidemiological and advisory work of the Office International d'Hygiène Publique, and at the same time made arrangements to take over the library and archives of the O.I.H.P. Similar steps were taken for the transfer to the Commission of the Epidemiological Notification Service, previously administered by the Health Organization of the League of Nations. But the Interim Commission did more than simply assume these and other services of preceding organizations. An Expert Committee assigned by the Commission, taking advantage of modern scientific knowledge, began the task of drawing up a new code of sanitary regulations and at the same time introduced the revolutionary innovation that such regulations would be automatically binding on all countries unless specific objections were lodged within a stated period.

In regard to biological standardization, too, an important step forward was taken by an Expert Committee of the Commission which adopted new international standards for penicillin, heparin, and vitamin E, and which formulated recommendations on a wide variety of essential therapeutic, prophylactic, and diagnostic agents of animal and plant origin, including diphtheria and tetanus toxoids, cholera vaccines, tuberculin, B.C.G., streptomycin, and human blood groups. Still another Expert Committee tackled the task of establishing uniform rules of nomenclature and dosage for chemical drugs, with the ultimate aim of preparing an International Pharmacopoeia. While a further Expert Committee on Habit-Forming Drugs devoted itself to the study of the medical aspects of the control of narcotics, another group assumed the work of preparing the Sixth Decennial Revision of the International List of Diseases and Causes of Deaths.

This rapid survey of technical services rendered by the Commission would remain incomplete without mention of the publication of several journals (the *Bulletin* of W.H.O., the *Chronicle* of W.H.O., the *Weekly Epidemiological Record*, the *Monthly Epidemiological and Vital Statistics Report*) through which provision was made for the dissemination of scientific, legislative, and general information.

Spearheading the attack which the permanent Organization was going to lead against the major ills of mankind, Expert Committees prepared plans for the world control of malaria, tuberculosis, and venereal diseases. The work initiated by the Interim Commission on problems of maternal and child health is an excellent example of its interest in all measures for promoting health in a positive way, as well as of its co-operation with the U.N. and its specialized agencies. Technical aid was given by an Expert Committee to Unicef in developing standards for mass vaccination with B.C.G. A Committee on Child Nutrition formed jointly with F.A.O. advised Unicef on child-feeding programmes.

In taking over a major part of the field work carried out by Unrra for the health rehabilitation of war-devastated areas the Commission also developed patterns for a number of services which were later to become an integral part of the permanent Organization's efforts to strengthen national medical and public health services. In China alone, 32 experts helped national authorities in the control of the four diseases which have been undermining the strength of that country : plague, cholera, kala-azar, and

tuberculosis. In Greece, too, W.H.O. experts contributed to the training of medical personnel, as well as to the control of the two outstanding health problems of that country, which were malaria and tuberculosis. In Ethiopia, experts helped the government in establishing basic training courses for sanitary inspectors and "dressers" and gave advice on epidemiological and sanitary engineering problems, while a team of American and Swiss specialists, under the joint sponsorship of the Interim Commission and the Unitarian Services Committee, went to Austria to demonstrate new medical and surgical techniques and the use of modern drugs and sera. The Missions established in Italy, Poland, and Hungary were mainly concerned with advising national health administrations, arranging lectures by visitors and experts, the provision of medical literature, and the selection of Fellows.

The awarding of Fellowships could be regarded as a cardinal part of the Commission's effort to assist countries in the training of expert health personnel. By April, 1948, 250 Fellowships, of an average duration of six months, had been awarded to ten countries, most of them in public health and clinical subjects. In addition to putting techniques and skill at the disposal of countries which had needed Unrra aid, the interchange of students proved itself to be one of the most effective instruments in building up international understanding and good will, the ultimate aim of the U.N. and its specialized agencies.

The importance of international solidarity in the solution of emergency health problems and the effectiveness of many measures worked out by the Commission were dramatically demonstrated in connexion with the Egyptian cholera epidemic of 1947. The Commission advised neighbouring countries on the necessary quarantine procedures, studied the potency of the various vaccines employed, co-ordinated supplies donated, and undertook with maximum speed the bulk ordering of cholera vaccine and other supplies from many different sources, thus effecting a substantial reduction in cost to the interested governments. The value of all these measures was acknowledged by Egypt, whose government, through the admirable steps it had taken, succeeded in checking in record time an epidemic which in the past had caused untold havoc in Asia and Europe.

That the Interim Commission could accomplish so much in such a limited time was due mainly to the excellent support and co-operation which never ceased to prevail among its members. While opinions and attitudes were freely expressed in the five sessions of the Commission, decisions were taken unanimously on a basis of compromise without using the voting machinery. Moreover, the members were always able to forget the differences which unfortunately still divide the world, and concentrated on the need which is common to all countries—namely, the need for physically and mentally healthy citizens.

First World Health Assembly

The spirit of understanding and compromise characteristic of the work of the Interim Commission was carried over to the meetings of the First World Health Assembly in Geneva in June–July, 1948, and was chiefly responsible for the remarkable degree of agreement which was reached by the delegates and observers from 68 nations attending the session. This expression of good will was evident during the detailed discussions which took place on the establishment of the framework for the permanent Organization and on its programme of work for 1949.

In connexion with the former item, the regionalization of W.H.O. activities was thoroughly debated. While certain delegates expressed their doubts on the wisdom of immediately creating regional organizations before the central administration was solidly established, the majority of the Assembly felt that such a step would have to be taken at once in order to enable the Organization to deal effectively with the specific needs of the various regions. It was therefore decided to establish such organizations and encourage the handling of all questions of a local character through the regional offices.

States Members of W.H.O.

Afghanistan	Israel
Albania	Italy
Argentina	Jordan (The Hashemite Kingdom of)
Australia	Lebanon
Austria	Liberia
Belgium	Luxembourg
Bolivia	*Mexico
*Brazil	Monaco
Bulgaria	*Netherlands
Burma	New Zealand
*Byelorussian S.S.R.	Norway
Canada	Pakistan
Ceylon	Paraguay
Chile	Peru
*China	*Philippines
Costa Rica	*Poland
Czechoslovakia	Portugal
Denmark	Roumania
Dominican Republic	Saudi Arabia
Ecuador	South Korea
*Egypt	*Sweden
El Salvador	Switzerland
Ethiopia	Syria
Finland	Thailand
*France	*Turkey
Greece	Ukrainian S.S.R.
Guatemala	*U.S.S.R.
Haiti	*Union of South Africa
Honduras	*United Kingdom
Hungary	*United States
Iceland	Uruguay
*India	*Venezuela
Iran	*Yugoslavia
Ireland	
Iraq	

The U.S.S.R., the Ukraine, Byelorussia, Bulgaria, Roumania, Albania, and Czechoslovakia have signified their wish to withdraw from the World Health Organization. No provision is made in the Constitution for the resignation of Member States, and the matter will be fully discussed at the Third World Health Assembly.

*States Members elected to designate a person to serve on W.H.O. Executive Board.

Guided by sanitary and epidemiological criteria, the Assembly agreed on the creation of six regional organizations to serve the following areas : Eastern Mediterranean, Western Pacific, South-East Asia, Europe, Africa, and the Americas.

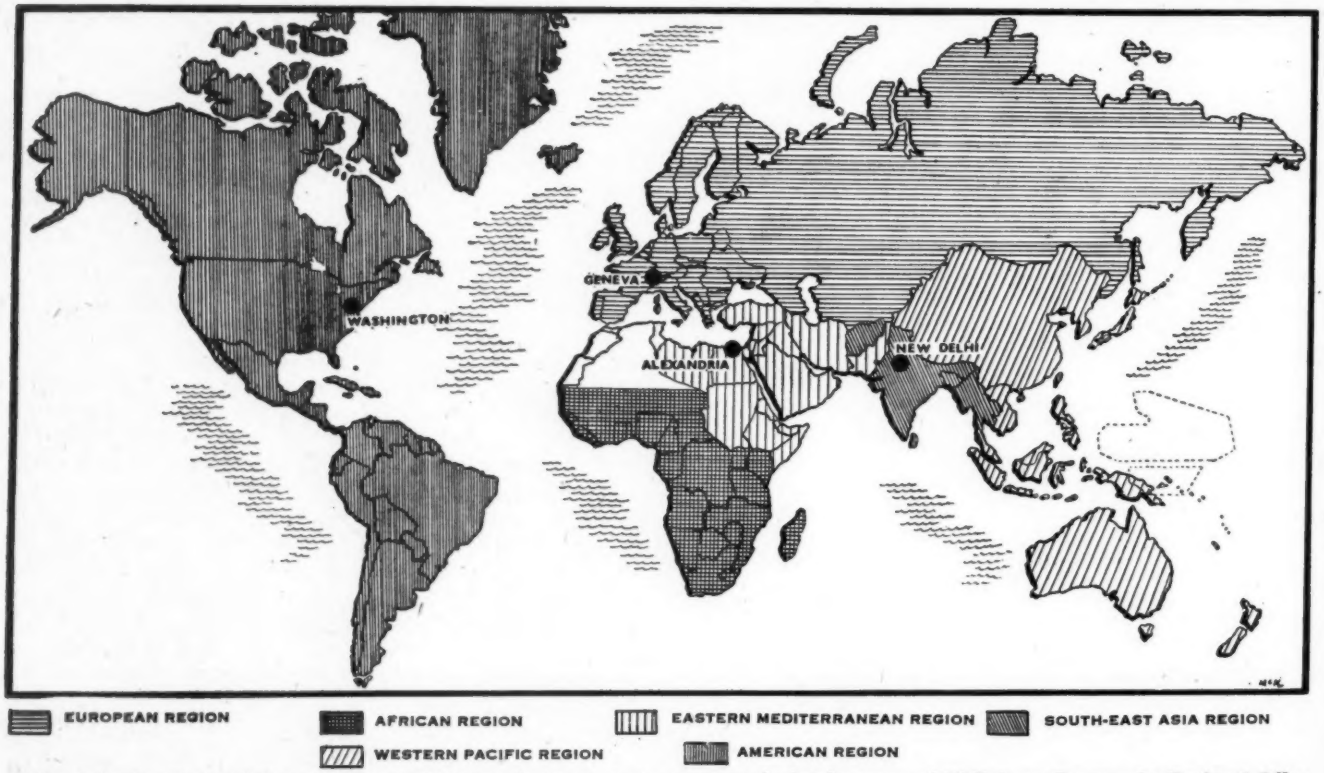
These decisions were followed by speedy action. Within one year after the Geneva Assembly, regional offices were firmly established in New Delhi and Alexandria, for South-East Asia and the Eastern Mediterranean area respectively, while the Pan-American Sanitary Bureau, following an agreement signed in Washington on May 24, 1949, began to serve as regional office for the Americas, pending the complete integration of that Organization with W.H.O. Furthermore, the establishment at headquarters of a special office for Europe has paved the way for the creation of a regional organization for this area. The remaining regional organizations will come into being as soon as the majority of the countries in the region so desire.

The drawing up of the programme of the permanent agency constituted a real challenge to the delegates. Faced on the one hand with a budget of only $5,000,000 for 1949, and on the other with an imperative need for attacking a staggering number of health problems throughout the world, the First World Health Assembly had to decide not so much what to do but what not to do, or rather to agree on a system of priorities according to which the various activities planned by the Interim Commission would be carried out. The selection of the priority projects was made on the following principles : (1) First consideration

should be given to diseases which lend themselves to international action; (2) the programme of the Organization should aim at the solution of health problems which exist in large areas of the world.

Accordingly the Assembly agreed on plans for international action on: (*a*) malaria; (*b*) tuberculosis; (*c*) venereal diseases; (*d*) the promotion of health by such positive means as concentration on measures aimed at raising the health of mothers and children; (*e*) the amelioration of environmental conditions which until now have been responsible for more than one-fifth of all deaths throughout the world; and (*f*) the improvement of nutrition—an essential condition to the betterment of health for both children and adults.

In addition to these six projects, the Assembly instructed W.H.O. to continue the functions taken over by the Interim Commission from previous international health organizations, to develop a large publications programme for the benefit of national health administrations, and to fight parasitic and virus diseases—with particular attention, in the former group, to schistosomiasis. Further, mental health was listed for special consideration, together with assistance to governments in the improvement of their own health services—especially in regard to hospitals, clinics, and nursing-homes, in medical rehabilitation, sanitary training, industrial hygiene, and hygiene of seafarers.



Map Showing Regional Organization of W.H.O.—The black circles represent the headquarters of W.H.O. at Geneva, the Regional Office for the Americas at Washington, the Regional Office for the Eastern Mediterranean at Alexandria, and the Regional Office for South-East Asia at New Delhi. Regional Offices for the African, European, and Western Pacific Regions have not yet been established.

Second World Health Assembly

The meetings of the Second World Health Assembly in Rome in June, 1949, opened against a background of experience gained by the Organization through the extensive work accomplished in its first ten months of existence. Indeed, the three sessions of the Executive Board which were devoted to an exhaustive study of all aspects of world health, the recommendations of the various Expert Committees which during that period tackled a number of diverse problems, the results of the first regional conference in New Delhi which held a frank discussion of the needs of the South-East Asia area, and, finally, the first plans established by W.H.O. for technical assistance to underdeveloped countries, were of great benefit to the Organization.

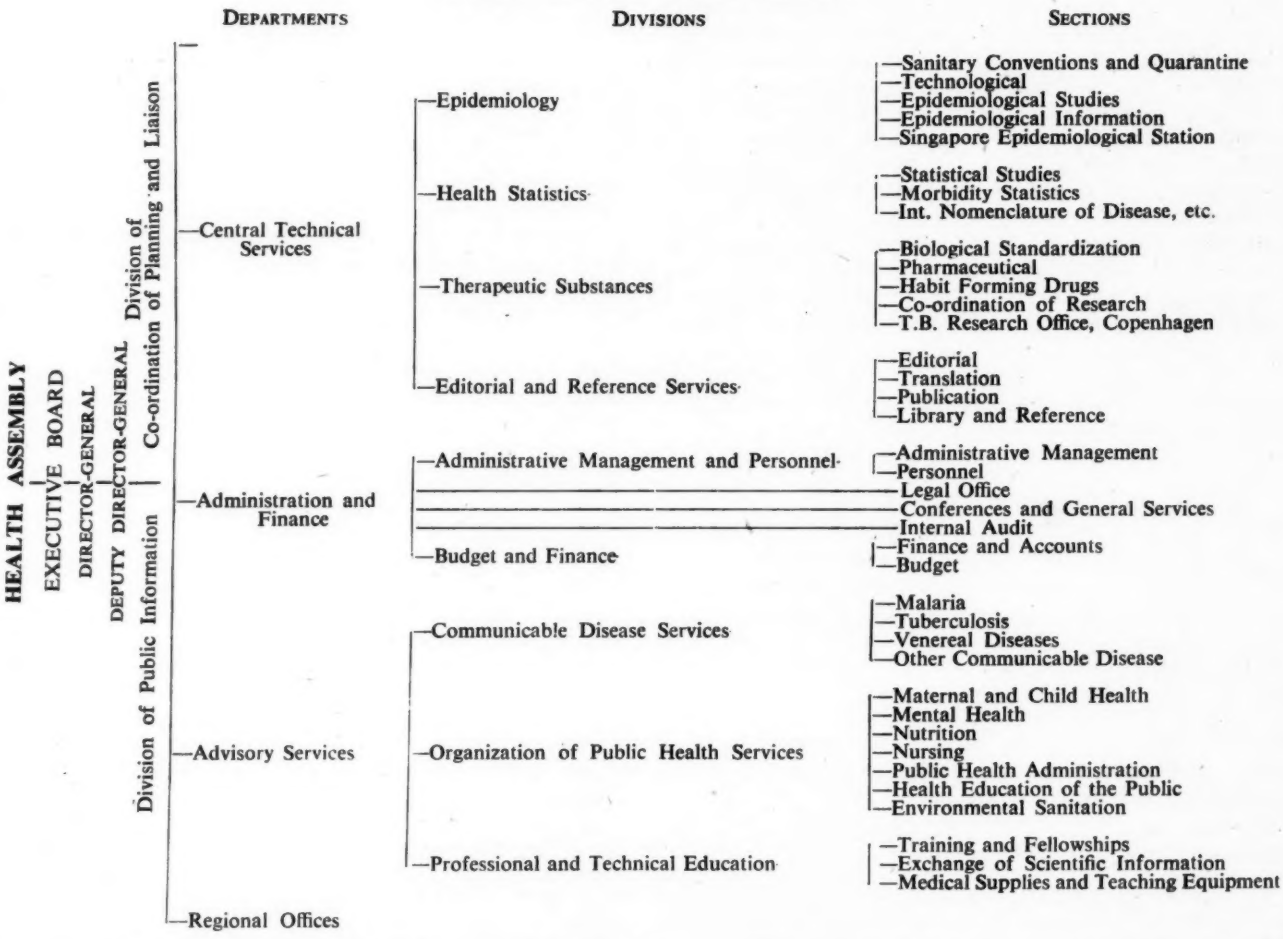
Out of all these factors calling for a redefinition of both W.H.O.'s short-term and long-range work grew what was termed a "new outlook" in international health, according to which the "attaining by all people of the highest possible level of health" can be achieved only through a well-planned, integrated attack on world health problems which would put at the disposal of all nations the techniques, material, and knowledge now available for solving those problems.

Perhaps one of the best illustrations of this new approach to health can be found in the plan for "health demonstration areas" which was adopted by the Assembly as an effective method by which to raise the health standards of underdeveloped countries, and which is expected to become an essential part of W.H.O.'s share in the U.N. scheme of "technical assistance for economic development of underdeveloped areas." This method entails the selection of several areas where a combined attack can be made on a number of diseases and adverse environmental conditions, and where a programme of health promotion can be developed to illustrate the results which would ensue from a rational application of modern public health methods. It was agreed that in the choice of such areas preference would be given to regions where there is at least one large-scale problem, such as malaria, suited to the eradication approach. It was further agreed that in the establishment of plans for the health demonstration areas adequate attention will be given to maternal and child care, health education of the public, and all other measures for promoting health in a positive way.

Another example of the broad view taken by the Second World Health Assembly of the Organization's role in improving health throughout the world is reflected in the project approved for malaria control and rural rehabilitation, to be carried out in co-operation with F.A.O. to assist interested governments. The aim of this project, scheduled to be carried out over a period of five years, is to increase production in areas capable of agricultural development and in which ill-health, in particular endemic malaria, is the chief obstacle to such development. Thus the plan, in addition to bettering the health of millions of people, would and will do much for the implementation of one of the W.H.O. fundamental principles—namely, that without mental health there can be no true physical health.

Among the controversial issues before the Assembly the question of medical supplies was the topic of lengthy discussions in the Committee on Programme. Some delegations felt that it was a function of W.H.O. in the present situation to provide essential medical supplies, such as D.D.T., penicillin, and streptomycin, to countries which do not produce these commodities and which, because of the lack of necessary currencies, are unable to import them in

WORLD HEALTH ORGANIZATION



be a great step forward in bringing relief to a world suffering from the disastrous political and economic consequences of one of the most acute food shortages in history.

The emphasis placed by the "new outlook" on positive measures for health improvement was translated into action by the Assembly in approving expanded programmes for maternal and child care, nutrition, environmental sanitation, public health administration, and the technical training of medical and auxiliary personnel. In the latter field the Assembly favoured the use of national institutes, and where necessary the establishment of special centres for the group training of Fellows, but it also decided that the granting of individual Fellowships would not thereby be ruled out.

The adoption of a mental health programme must be regarded as a truly historic step taken by the Assembly to bring this new field of medicine into the area of intergovernmental action. The programme laid down for 1950 included mainly the assembling of mental health data with respect to rural areas, industrial units, and university groups,

the quantities required for carrying out national health projects. Other delegations stated that the time for emergency distribution of supplies by world agencies was over, and pointed out that the amount of assistance which W.H.O. could furnish in that field was infinitesimal compared with world needs, and held that medical supplies, like other commodities, should now be obtained through the normal peacetime economic machinery. A compromise solution put forward by the Executive Board was eventually adopted whereby the Organization will make supplies available to governments on an extremely limited scale and under special circumstances. It is to be expected that this basic problem of the great need for medical supplies and equipment will be raised again in future Assembly sessions.

As at the First Assembly, the question of financial means was widely discussed in Rome. The Second Assembly was required to face the situation in which the Organization found itself, owing to the fact that the Geneva Assembly, while limiting the budget for that year to $5,000,000,

approved operations which by the end of that year called for the expenditure of about $7,000,000 on an annual basis. The cost of the programme of work proposed for 1950 was estimated at about $17,000,000. The Assembly agreed that the proposed programme should be financed from a regular budget of $7,500,000 and from a supplemental budget of $10,500,000, the latter to be raised by voluntary contributions from Member States willing to participate in the raising of health standards in underdeveloped countries through such an expanded programme. Later, through developments in the Economic and Social Council, this expanded programme was adapted to the U.N. scheme of technical assistance to underdeveloped areas.

Unfortunately, the envisaged expansion in activities provided by the regular budget approved during the Second World Health Assembly was considerably checked by the fact that towards the end of 1949 it appeared almost certain that the contributions of some States would not be forthcoming. Taking into consideration the failure of some States to contribute in 1949, the Executive Board at its fifth session in January, 1950, decided that, pending further consideration of this problem by the Third World Health Assembly, the regular budget for 1950 should be held to a level of $6,300,000 rather than the original $7,500,000, thus leaving the technical assistance programme as the only hope for the implementation of many plans badly needed for the solution of urgent world-wide health problems. The lack of funds adequate for the carrying out of an international public health programme continues to be one of the most serious handicaps.

The Structure of W.H.O.

The main lines of the structure of W.H.O., established by the First World Health Assembly, are laid largely on the basis of the Constitution of the Organization and on the recommendations made by the Interim Commission. However, in the light of experience gained during the last eighteen months, the organizational structure underwent essential modifications, particularly so far as the Secretariat was concerned. The most important of these changes were the ones approved by the Executive Board at its fifth session, as a result of a study undertaken by the Board of the whole organizational structure.

The organs of W.H.O. and their chief functions can be briefly summarized as follows :

The World Health Assembly, which is composed of delegates representing the States Members, meeting in regular annual session to determine the broad policies of the Organization, to decide on its annual programme and its budget, and to adopt such international health regulations as may be necessary.

The Executive Board, which consists of 18 persons from as many countries designated by the Assembly, meeting at least twice a year to give effect to the decisions and policies of the Assembly, to prepare the agenda for sessions of the Assembly, and to take emergency measures for dealing with events requiring immediate action.

The Secretariat, which comprises the organizational, technical, and administrative staff, carrying on the actual day-to-day work of W.H.O. in its various phases, in the Geneva headquarters as well as in the regional offices.

The accompanying Chart illustrates the departmental, divisional, and sectional grouping of the Secretariat. Broadly speaking, the Department of Technical Services is the fact-gathering arm of the Organization, and also has the task of administering international regulations passed from time to time by the Health Assembly on quarantine and other matters; while the Department of Advisory Services deals chiefly with applying, demonstrating, and furthering knowledge and techniques developed in any part of the world to other parts of the world having similar problems.

The Future of W.H.O. : Plans and Problems

By necessity the task of W.H.O., as conceived by the Constitution and outlined in the successive plans drawn up in the last three years, will be an arduous and long one. To carry it out will require much patience, as well as a degree of world-wide co-operation and a lack of concern for individual, local, national, or regional advantages or prestige that have never before been reached by any international organization.

We know that the job can be done. The means to fight and eventually eradicate most of mankind's scourges exist. So do the means through which we can raise a physically and mentally healthy generation. The issue of the *British Medical Journal* for January 7, 1950, devoted to " 50 years of medicine," contains an exhaustive survey of the admirable weapons human genius has evoked to protect and promote man's health wherever he lives. What remains to be done is to ensure the widest application of the discoveries made in those last 50 years in all fields of medical science and public health techniques.

The very existence of W.H.O. proves that most nations have awakened to the necessity for making that progress available to all peoples of the world. They have become aware of the fact that to do this is their responsibility, not only for humanitarian reasons but also for their own self-interest. Indeed, in this shrunken universe of ours no further proof is needed to realize that, so far as health is concerned, our world will be one or none.

The Third World Health Assembly meeting in Geneva in May of this year will have before it concrete proposals for the implementation of both the short-range and the long-term plans of W.H.O. Detailed programmes have been worked out for 1951 for the expansion of the advisory services, the main aim of which will continue to be the strengthening of national health administrations, and to assist them to carry out malaria, tuberculosis, and venereal diseases control, and to develop maternal and child care, mental health, nutrition, environmental sanitation, health statistics, and medical training facilities.

In regard to the technical services, efforts will be made to obtain official recognition throughout the world of established international standards for biological products, as well as approval, and eventual inclusion in national pharmacopoeias, of the " International Pharmacopoeia "; and, finally, the preparation of a new draft of International Regulations governing health measures in world trade and travel.

The Third World Health Assembly will also examine a programme to be financed through funds to become available under the U.N. programme of technical assistance for economic development, which will make possible a further development of the above-mentioned technical services and health campaigns, with particular emphasis on those related to diseases prevailing in tropical areas, such as malaria, bilharziasis, cholera, plague, etc.

Finally, the Executive Board will submit to the Third World Health Assembly a four-year programme designed as a framework within which annual programmes should be developed, starting in 1952. This programme, to be periodically reviewed in the light of new problems which might arise and new techniques which may be devised in the future, is limited to activities which are internationally feasible, universally important, and, of such a nature that

results achieved at the end of the four-year period will be readily understood by governments and peoples. Under this heading, for example, come projects which will lead to a considerable decrease in the number of deaths from malaria or venereal diseases, or to a marked reduction in infant mortality in a given area.

Whether these plans will become a reality depends on whether we will be able to overcome several problems the successful solution of which is essential to the future of W.H.O.

For instance, it is obvious that in order to implement these plans over a number of years W.H.O. will have to avail itself of the services of men with experience and skill in the various fields of medical science and public health as well as with a real understanding of the international obligations incumbent upon the Organization. A maximum effort will have to be made by W.H.O. to recruit such experts and technicians on a world-wide basis so that its Secretariat would have the broadest possible geographical representation and so that progress made in various countries could be used for the benefit of all. This will often call for sacrifices on the part of the Member States in releasing, on a temporary or a permanent basis, medical and technical personnel whom they may need for the purposes of their own health administration.

To carry out our battle for world health will of course take money. It has been estimated that four of the worst diseases could be wiped out from the earth for less than it costs the world to finance a war for one week. Yet the amount of money put at the disposal of W.H.O. for one year's operations is not larger than that spent annually by many a large city for its own municipal health programme. It will be our responsibility, and the responsibility of each health administrator associated with the work of W.H.O., to convince governments that at a time when thousands of millions are allotted for rearmament purposes a few more millions must be invested by the people in the most precious values they have to protect—their own health and the health of their children.

An even more important prerequisite for the success of W.H.O. is the fullest participation of all nations in its work. Unfortunately, W.H.O. is still not the world-wide organization its planners meant it to be. Several countries have not yet joined it, others are not giving it the necessary support, while still others, some of whom played an important part in its creation, have ceased active membership. This situation cannot endure. Political, social, and economic differences have no meaning when the health of the people is at stake. If there are divergent opinions about how our common battle should be fought, they should be settled within the Organization, with the help of everybody.

It is obviously in the interest of all nations and all groups to participate in this crusade, the only aim of which is to alleviate the sufferings of man, and, in so doing, make the coming generation physically, mentally, and socially healthy.

Mr. G. E. Haynes, secretary of the National Council of Social Service, left London on April 30 for a nine weeks' lecture tour in Australia and New Zealand, arranged by the British Council. In Australia he will be the guest of the Australian Government, and his programme, arranged by the Department of Social Services, includes visits to Sydney, Canberra, Melbourne, Hobart, Adelaide, Perth, and Brisbane. He is lecturing on "Co-operation Between Voluntary and Statutory Bodies in Social Welfare" and "The Citizen and the State: Partners in Social Welfare." Mr. Haynes will go on to New Zealand on June 15.

ADVISORY SERVICES OF THE WORLD HEALTH ORGANIZATION

BY

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In the century-old history of international health co-operation a changing emphasis in objectives and methods can be noted—a change from a negative to a positive approach. International co-operation began with the setting up of quarantine regulations to prevent the spread of communicable diseases from one country to another; to-day the objective is the control, even the eradication, of such diseases wherever they are prevalent. From dissemination of information on pestilential diseases we have progressed to pooling knowledge, experience, and resources to provide assistance to countries in promoting the health of their peoples. Instrumental in providing such assistance are the "advisory services" of the World Health Organization (W.H.O.), by means of which governments are granted aid of many types to build up health services which will continue to function after outside help is withdrawn.

The need for the W.H.O. to provide a programme of advisory services to governments is found in the fact that the countries of the world differ to a marked degree in the stage of development of their health, medical, and related services. The interrelation of the health status of a people and their economic and social development has long been recognized. W.H.O., through its advisory service programme and in collaboration with U.N. and other specialized agencies concerned with agriculture or industry, is developing the channels through which the nations of the world together can give the impetus necessary to advance the cause of world health.

The advisory services programme of W.H.O. is the place to which the U.N. and its specialized agencies will look for help in developing the health aspects of special activities, whether of an emergency character, as in the case of the United Nations International Children's Emergency Fund (Unicef) or the U.N. Relief for Palestine Refugees, or of a more lasting character, as in the case of the proposed U.N. programme of technical assistance for economic development. It is not an exaggeration to say that success in any programme of technical assistance for economic development in underdeveloped countries will require that health scourges such as malaria, tuberculosis, and venereal diseases be controlled, and that sources to promote the physical, mental, and social health of industrial and agricultural workers and their families go hand in hand with programmes for economic development.

Types of Service

The W.H.O. advisory service programme consists largely of: (1) assistance to professional and technical education, including: (*a*) assistance to educational institutions, (*b*) fellowships, (*c*) exchange of scientific information, and (*d*) distribution of medical literature and teaching materials; (2) consultation and advisory services, including general information on organization of health services and specialized advice on medical and related subjects as requested; and (3) demonstration projects and supplies for such.

These advisory services are provided to governments through the Regional Staff of the Organization. They are based on the best available knowledge in the different fields. This information is gathered from a wide variety of sources. It is evaluated and prepared for use at the headquarters of

W.H.O. Expert Committee on Plague.—Meeting at Geneva, September 19–24, 1949. Those sitting, left to right, are Dr. P. C. C. Garnham (U.K.), Dr. P. M. Kaul (W.H.O.), Sir Sahib Singh Sokhey (India, Chairman), Dr. Georges Blanc (France), Mr. D. H. S. Davis (S. Africa). Standing, left to right, Dr. Almir Castro (Brazil), Dr. Karl F. Meyer (U.S.A.), Dr. A. Macchiavello (W.H.O.), Dr. C. Klimt (W.H.O.), Dr. Y. Biraud (W.H.O.).

the Organization and in the regional offices. It is made available to governments and as requested to other health institutions and organizations.

Expert Committees

In order that the knowledge and opinions of experts on subject-matter related to the major interests of W.H.O. may be made readily available to National Health Administrations on a world-wide basis, the World Health Assembly has authorized the appointment of committees of experts to consider scientific questions, service programmes, and related problems, and to prepare reports. Through this means the Organization receives the advice of leading specialists from different parts of the world ; the experts are enabled to discuss and exchange opinion on scientific matters from the point of view of countries that have reached different stages in the development of their health and medical programmes ; and standards for world-wide use can be established.

The information and recommendations resulting from the meetings of the expert committees are published in the World Health Organization Technical Report Series and are made available to all interested governments, institutions, and individuals.

In connexion with the " advisory services " the following expert committees have been authorized : Environmental Sanitation ; Hygiene of Seafarers (joint with I.L.O.) ; Insecticides ; Malaria ; Maternal and Child Health ; Mental Health ; Nursing ; Nutrition (joint with F.A.O.) ; Professional and Technical Education ; Public Health Administration ; Tuberculosis ; and Venereal Infections.

Small subcommittees may also be appointed to advise on particular questions, as, for example, on school health services, problems of premature birth, serology in the diagnosis of venereal disease, the use of streptomycin, and so forth. Committees of experts convened by other departments of the Organization make reports that are useful in the advisory service programmes, for they establish standards that can be utilized by the advisory service staff in giving assistance to national health administrations. Thus the recommendations of committees on epidemiology, plague, cholera, or schistosomiasis, on virus diseases, or on health statistics aid materially in the implementation of programmes of control of communicable diseases and in the development of national or local health services.

Professional and Technical Education

One of the most serious obstacles to the promotion of health in every country is the lack of adequate trained personnel. When tackling this problem on an international scale it is necessary not only to attempt to meet quantitative requirements but also to train specialists and to keep physicians and other medical personnel abreast of the latest developments in medicine, not just in their own countries, but everywhere. These needs are met by a variety of types of assistance, including advisory service to training institutions, fellowships, group training, seminars, and other means for the exchange of scientific information.

W.H.O. must be well informed on all educational opportunities and facilities in the fields of medicine, public health, and nursing, and in the various other aspects of the health programme, such as nutrition, medical social work, and the social sciences in general. Furthermore, W.H.O. must be able to advise and assist countries and educational institutions in training health personnel. This is a large undertaking, and as yet only a beginning has been made. It is an essential part of the work of an international health organization, however, as is well recognized by the Member Governments, and it will be facilitated by the development of regional activities co-ordinated through the headquarters technical staff. Already, however, W.H.O. has been able to give consultation service to a number of schools of public health and is assisting several schools of medicine and nursing with teaching personnel. In two schools of medicine assistance in modern anaesthesia is being given, in one assistance in biochemistry ; in several schools of nursing the teaching staff in maternal and child health or in public health nursing is being augmented.

Fellowships

Of the various types of assistance to governments in improving the quality of the health and medical services, the most widespread has been the fellowship programme. This service was inherited by W.H.O. from Unrra, and was carried on by the Interim Commission until the permanent Organization was established. A precedent for this type of service to countries had long been set by certain of the great foundations which for many years have successfully aided in the training of health personnel in many parts of the world through grants for fellowships.

In the selection of Fellows by the countries, emphasis is laid on choosing those who can contribute most to their respective health programmes. Priority is given to subjects in which W.H.O. is particularly interested and to persons who occupy, or may occupy, administrative or teaching positions. Requests for fellowships come through national health administrations, and both the country concerned and the prospective Fellow undertake obligations relating to the utilization of the knowledge and experience gained through the studies financed by W.H.O.

Fellowships may be either for individual tuition or observation or for group training. All are for postgraduate education, with the exception of those granted to countries that do not have their own graduate personnel. Fellowships for undergraduate studies have so far been limited to two countries

W.H.O. Yellow Fever Panel.—First Session at Geneva, December 1–6, 1949. From left to right: Dr. Fred Soper, director, W.H.O. Regional Bureau for the Americas; Médecin-Colonel Saleun, adjoint technique du Médecin Général Inspecteur Vaucel, Ministère de la France d'Outre-Mer, Paris; Dr. A. F. Mahaffy, former director, Yellow Fever Research Institute, Entebbe, Uganda; Dr. Waldemar Antunes, director, Serviço Nacional de Febre Amarela, Departmento Nacional de Saude, Rio de Janeiro, Brazil; Dr. G. L. Dunnaho, Medical Director, Chief, Division of Foreign Quarantine, U.S. Public Health Service, Washington, U.S.A.

Exchange of Scientific Information

Several methods for the exchange of scientific information through the channel of advisory services to governments are being utilized by W.H.O. These include the arrangement of seminars on special subjects. The leaders of such seminars are experts, brought together by W.H.O. from a number of countries in which special work has been carried out in the special fields in which there have been recent scientific advances, knowledge of which is desired by professional people in the various countries.

The seminars may be held for the benefit of professional workers in a group of countries, and be located in one country to which access is relatively easy and facilities are available. To such, governments in the area are invited to send selected professional workers. In other cases the leaders of the seminar may travel from country to country, thus reaching larger numbers of professional persons in each country

Another method of providing for the exchange of scientific information is by assisting governments to improve their medical libraries and to develop schemes of exchange of literature through the use of microfilms and reference techniques. Such assistance has been given to one country with a view to making reference materials available to a number of neighbouring countries.

Medical Literature, Teaching Materials, and Other Supplies

Some material assistance is a necessary complement to the other advisory services, especially in the educational and training programmes and in the other projects whose main objective is to assist national health administrations to initiate and carry out new or expanded health projects. In 1949 W.H.O. supplied, in answer to requests from governments, approximately 3,368 annual subscriptions to periodicals, 3,133 books, and a variety of other teaching materials, such as film strips, slide projectors, anatomical charts, skeletons, obstetrical models, etc.

In meeting the needs of countries for medical supplies in connexion with a variety of health programmes the limited budget of W.H.O. could only scratch the surface even if it were devoted entirely to such an undertaking. It can therefore be readily understood why the World Health Assemblies have chosen to devote the major part of the budgets to services of an advisory nature, which have more far-reaching effect for the amount of money invested than would supplies purchased at the same cost. However, it was realized that a certain quantity of medical supplies would have to be provided in some cases for projects to which the Organization would be contributing personnel. Thus budgetary provision has been made for procurement of limited supplies and equipment where no other source of supply is available. Such supplies have included mass x-ray units, microscopes, vaccines, and D.D.T. In projects undertaken jointly with Unicef, the latter has supplied the necessary funds.

Consultation and Advisory Services

One of the most extensively used of the advisory services is the assistance of W.H.O. advisers and consultants in surveying the health needs of, and in planning specific projects for, countries requesting aid. These advisers and consultants, who are experts in their particular fields, may be attached to headquarters or to regional offices; or they may be assigned on a short-term basis to a specific survey or project. During 1949 consultant services were granted to approximately 15 governments for help in tuberculosis projects, to 24 for advice concerning control of venereal disease, to 16 on problems relating to maternal and child health, and to 15 for assistance in malaria control. Experts in mental health, public health, sanitation, and health education of the public, or in such highly specialized subjects as poliomyelitis and immunization against whooping-cough, have also visited various countries.

As short-term consultants are requested by countries to advise on a specific aspect of some broad programme, the long-term regional advisers give advice and assistance in the organization and broad development of major problems. In the latter case, not infrequently a team of advisers work together, as when a specialist in maternal and child health and a nurse go to assist a country in planning its child health programme.

The consultant and advisory services are particularly important at this stage in the work of W.H.O., because expert advice is needed before any major project is undertaken. Sending consultants to survey the situation and to map out a feasible programme is one means of assuring ultimate success and of sharing technical knowledge and experience.

Demonstration Projects

Demonstration teams are in some circumstances proving to be an effective type of advisory service. The work which they do can be illustrated by the activities of the malaria demonstration team in Pakistan.

As is well known, malaria is one of the greatest scourges of mankind in Southern Asia, and is a major if not the most important cause of death and sickness in parts of Pakistan, affecting many millions of people, including children.

In 1948 the Pakistan Government submitted a request to W.H.O. for a malaria demonstration team to assist in showing to the people that with the use of D.D.T. and modern spraying methods the disease could be virtually wiped out. A request was also made to Unicef for supplies and equipment, and in the spring of 1949 a W.H.O. international team consisting of a malariologist, a sanitary engineer, and a public health nurse was sent to an area in Eastern Pakistan chosen by the Government. The Pakistan Health Department assigned to the team an entomologist, a second malariologist, a sanitary engineer, and a public health nurse, thus making the project one in which responsibility was shared by the international and the national bodies. The Pakistan Government also supplied all the necessary subordinate personnel for the survey and for spraying operations. Unicef provided equipment, motor vehicles, a laboratory unit, and supplies of D.D.T. sufficient to protect a population of 75,000 for a year. The W.H.O. staff members had the task not only of demonstrating the most effective means of malaria control but also of training local personnel.

The work began with a general survey of the health situation of the area. Spraying operations were carried out, and, when the season for the transmission of the disease by mosquitoes was over, a survey of both the sprayed area and a neighbouring control area was made. Spleen rates in the sprayed area fell considerably below those found in the area at the beginning of the project, whereas in the control area they remained at the same level; subtertian malaria infections were found to be abundant in the control area but extremely rare in the sprayed zone.

Throughout the period entomological data were collected systematically, studies on the bionomics of the anopheline species of the area were undertaken, window-trap catchings were recorded, and experimental work was carried out.

While the malaria-control operations were in progress, and during the period between spraying operations, several members of the team gave assistance locally to other public health activities. For example, the public health nurse, with the aid of her Pakistani colleagues, was engaged in concomitant activities relative to health education and maternal and child welfare; she visited homes and schools, supervised the work of half-trained midwives, and assisted other team members in various projects. When the spraying operations were completed the malariologist assisted the public health services in a survey of kala-azar cases, through the capillary method of the formol-gel and antimony tests, with a view to assessing the results of D.D.T.-spraying on the transmission of the disease. Treatment was also organized. The sanitary engineer assisted in the programme of general health improvement by helping relevant departments of the local government in plans for water supply and sewage disposal.

An agricultural expert has recently been assigned to the team by the Pakistan Government in order to assess the increase in agricultural production, if any, following improved health of the rural population.

The first year of operations must be considered a pilot project. Not until the end of the second year (1950), when the most effective use of personnel and organization is realized and the population protected reaches 250,000, will it be possible to evaluate the results and to assess the minimum cost per capita of malaria control. It is hoped that the cost will be amply compensated by an increased output of work and agricultural production, in addition to other benefits which will follow improvement in the general health of the population.

On completion of the operations the international team will be withdrawn, leaving behind experienced Pakistani personnel with knowledge of a well-tried technique to continue malaria control in the same area and to extend it to other regions.

Fields of Activity

Because the demand for advisory services and the costs involved exceed the financial means of the Organization, certain criteria have had to be established for the selection of projects to which assistance should be granted. It has therefore been considered advisable to concentrate on major health problems and on programmes relating to them which, it is hoped, will produce rapid and readily apparent results. For this reason, the First World Health Assembly decided that priority should be given to maternal and child health and to the control or eradication of malaria, tuberculosis, and venereal diseases, all of which respond well to large-scale operations.

Sanitation and nutrition are next in importance, and programmes in these fields may readily be combined with child health promotion and disease-control projects. Public health administration, nursing, mental health, and health education of the public are receiving much attention. Because progress in any field of public health is dependent on the supply of well-trained personnel, emphasis at every point is given to ways and means of strengthening professional and technical education.

Malaria

W.H.O.'s malaria-control operations include two types of activities: eradication of anopheline vectors by means of spraying with D.D.T. and/or other insecticides, and treatment of malaria cases with the latest antimalarial drugs.

Seven demonstration teams, such as the one working in Pakistan, are operating in Afghanistan, India (four teams), Iran, and Thailand. Unicef has assisted with supplies in five. In one, W.H.O. has provided the supplies as well as the team members. Consultants have visited Africa, Lebanon, Mexico, North Borneo, the Philippines, Turkey, Venezuela, Yugoslavia, and the U.S.A., as well as the countries harbouring the Palestine refugees. Many of these activities have been of a preparatory nature, and it is impossible to arrive at their full value until more time has elapsed and more experience has been gained.

Venereal Infections

In its programmes of venereal disease control W.H.O. is placing emphasis on early syphilis, syphilis in pregnancy, prenatal and infantile syphilis, and venereal infections which represent a particular problem in a certain geographical area or population group. Large-scale operations utilizing foreshortened treatment with penicillin have been undertaken by many countries with the help of W.H.O. or of W.H.O. and Unicef. Serological laboratories and training facilities are a part of each major demonstration programme. An attempt is made to develop a balanced programme in which the participating country provides personnel and supplies in addition to those furnished by the international organizations.

The efficacy of penicillin against other treponemas besides *Treponema pallidum* has given impetus to health work in countries where parasyphilitic extravenereal diseases cause considerable damage to the health of the people, particularly of children. The interrelationship of the endemic syphilis of Bosnia (Yugoslavia), yaws of the Caribbean area, the East Indies, and the Pacific Islands, and pinta of Mexico, the Middle East, and South and Central America has presented problems for health

administrators, epidemiologists, clinicians, and pathologists for many years. The susceptibility of these treponematoses to penicillin has resulted in an orientation towards "treponematoses control" rather than "syphilis control," "yaws control," etc. Field programmes supported by Unicef and/or W.H.O. in mass attacks against yaws in Haiti, Indonesia, and Thailand, against bejel in Iraq (planned for 1950), and against endemic syphilis in Yugoslavia, as well as the activities of W.H.O. venereal-disease-control demonstration teams in Egypt and India, provide invaluable material for comparative investigations of the nature and interrelationship of these treponematoses and their causative agents.

The W.H.O. field programmes assist the countries in undertaking mass clinical and serological surveys of population groups, followed by penicillin treatment of proved cases. In Poland more than 45,000 cases of venereal disease were treated in 1949. In the endemic syphilis area in the Ghund Valley (Simla, India) control of infectious cases of syphilis was achieved within a few months following the mass attack. The entire population of this secluded valley was examined clinically and serologically, and the preliminary survey revealed a large number of infectious cases and a seropositivity prevalence of 65%. In the subsequent mass treatment, procaine penicillin with 2% aluminium monostearate was used. Follow-up examinations at intervals indicated that no new case of fresh infectious syphilis occurred in the valley up to five months after the initial attack. For treponematoses otherwise, it has been shown by investigators in Africa that villages in underdeveloped areas with a high prevalence of yaws can be kept free of the disease.

In co-operation with the health administrations, an endeavour is being made to train in modern methods as many doctors and technicians as possible, using the jointly established local venereal disease demonstration teams and treponematoses projects as provisional training centres so that the latest laboratory and field techniques may become part of local and national programmes. For example, thirty physicians and technicians were trained in 1949 at the laboratory and clinical centres of the Simla demonstration area in India.

Tuberculosis

Much of W.H.O.'s work on tuberculosis has been undertaken in association with Unicef, which has been conducting extensive mass B.C.G.-vaccination campaigns and provides streptomycin and supplies and equipment for tuberculosis laboratories and diagnostic clinics. W.H.O.'s activities have included technical assistance on programmes, equipment, and techniques in various countries, including Austria, Ceylon, China, Czechoslovakia, Egypt, Finland, France, Greece, Iceland, India, Israel, Lebanon, Pakistan, Poland, and Yugoslavia, and preliminary surveys in approximately thirty countries. Through its Tuberculosis Research Office in Copenhagen, W.H.O., in co-operation with Unicef, is evaluating the results of mass B.C.G.-vaccination campaigns. Assistance has also been given in establishing a B.C.G. laboratory in Mexico City.

A W.H.O. demonstration team, consisting of a medical officer, an *x*-ray technician, a laboratory technician, and a nurse, is being started in El Salvador. Here a tuberculosis centre for diagnosis is being established for which W.H.O. has provided equipment and supplies. Advice was given to Turkey on the setting up of a teaching and training centre in Istanbul, and a full-time director of the project has been assigned by W.H.O. for one year. Lastly, advisory services on streptomycin therapy are being given in a number of European countries, consultants being provided by W.H.O. and supplies by Unicef.

Maternal and Child Health

In maternal and child health, as in programmes directed against communicable diseases, advisory services take the form of consultations and surveys, demonstrations, provision of personnel and technical information for projects in association with other agencies—Unicef in particular—assistance to already existing health services, and educational aid of various types. Consultation services on numerous subjects relating to maternal and child health have been given to approximately fifteen countries. A demonstration team, consisting of one paediatrician and one instructor in paediatric nursing, is working in India, and joint Unicef/W.H.O. teams have begun operations in Malaya and in South Korea. Full-time regional advisers in maternal and child health have been attached to the offices in South-East Asia, Eastern Mediterranean, and the Americas, and to the special offices for Europe and the Western Pacific.

Since the programme for the promotion of the health of mothers and children is largely one of advice to governments on the organization of national and local services, methods of establishing preventive clinics and health education, and on modern obstetrics and paediatrics, the work of the regional advisers in these fields has a particular importance. At the request of governments highly specialized consultants are made available, as in the case of two teams of consultants in the care and treatment of children with poliomyelitis that have spent three months each in India and Chile. These teams consisted of an orthopaedic surgeon, an orthopaedic nurse, and a physiotherapist. Particular emphasis is placed on planning with the government health authorities on how training centres for such teams can be established.

Other Activities

In addition to these major activities relating to communicable diseases and to maternal and child health, W.H.O. provides advisory services in the fields of mental health, nutrition, public health administration, environmental sanitation, health education of the public, nursing, and professional and technical education.

Close collaboration is maintained with other U.N. agencies—for example, some of the mental health activities are closely related to Unesco projects and to projects of the Division of Social Activities of U.N.; nutrition problems are handled jointly with F.A.O.; certain public health projects, particularly in relation to occupational hygiene and the hygiene of seafarers, require the co-operation of I.L.O.; and many programmes are carried out in association with Unicef inasmuch as they are concerned with problems of child health.

No attempt has been made to describe in full the field activities of W.H.O. Details may be found in the annual reports of the Director General and in the "Programme and Budget of the Organization," both of which are published in the *Official Records of the World Health Organization*.

Selection of Programmes

In 1949, the first full year of operation of the permanent Organization, one-third of the budget of W.H.O.—or about $1,600,000—was allotted to the advisory services. This amount represents only a part of what would have been required if the Organization had provided all the services requested by Member Governments; and it does not

include the substantial sums which the Unicef, in co-operation with W.H.O., has spent on child health activities. Requests for the assistance of W.H.O. in 1950 have far exceeded those in 1949. Approximately $2,000,000 is available to meet these requests (roughly one-third of the total budget).

Because of financial limitations and the consequent necessity for making the best possible use of the funds allotted to the advisory services, certain guiding principles for the selection of projects have been set up by the Executive Board of W.H.O. The following criteria are used :

1. Programmes established by the World Health Assembly or by the United Nations and its specialized agencies.
2. Recommendations of expert committees.
3. The importance of the problem to the whole health programme of the requesting country, and inability of the country itself to provide the services required, as measured by the availability of trained personnel, the means of training personnel, or available foreign currency.
4. The probability of achieving successful and useful results.
5. Assurance of participation and co-operation on the part of the government throughout the programme, including contributions to the programme by meeting such costs within the country as can be met in domestic currency.
6. Reasonable assurance from the government, where appropriate, that the programme will be continued, especially that the government has established, or will establish, a health organization with personnel and financial support adequate to continue the programme.
7. Equitable distribution among the various countries seeking assistance when the requests exceed the available budget.

Requests and Approvals.—Requests for advisory services are submitted by Member Governments as part of a general programme for which aid is desired. Detailed proposals come later, after tentative allocations have been made and consultations have taken place with the W.H.O. Regional Director and with the technical advisers attached to the headquarters of the regional offices of W.H.O. In mapping out both general and specific programmes the assistance of special consultants or advisers from the regional office is usually required. Requests for assistance are forwarded by the countries to the Regional Directors, who, after any necessary consultation with the technical staff at Headquarters, make recommendations to the Director General with respect to approval and allocation of the necessary funds. The ultimate decision whether or not a specific project is approved rests with the Director General.

Conclusion

The current programme of W.H.O.'s advisory services to governments is based upon the constitutional provision that among many functions W.H.O. shall "assist governments, upon request, in strengthening health services." The scope of these advisory services could be as broad as the total health programme. Because of the limitation of funds, however, and the desirability of focusing attention on the most urgent problems, the World Health Assembly has given priority to certain major programmes, chosen because of their world-wide importance and because of the susceptibility of the conditions or diseases involved to well-established methods of approach.

This form of international service is relatively new. It can be expanded as the need for more services becomes apparent or as new knowledge is developed. Through it the nations of the world have a means of exchanging information with each other, of giving technical assistance to each other, and of pooling their knowledge and resources for world health.

ORIGINS OF INTERNATIONAL HEALTH WORK

BY

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The subject of this article is international health work in the restricted sense of intergovernmental action on health problems. As Sir George Buchanan (1943a) remarked some years ago in his Milroy Lectures : "Any suggestion that medicine, always amongst the most international of the learned professions, should henceforth first look to the League of Nations or any other intergovernmental office in order to maintain its proud tradition of internationalism would indeed be retrograde." In any complete account of international health work reference would also have to be made to the International Red Cross Organization, the International Health Division of the Rockefeller Foundation, and the various international medical congresses.

Nevertheless, in spite of technical improvements in facilities for communication, the last century has seen the growth of many obstacles to non-governmental internationalism in medicine. Latin no longer provides a common scientific language for physicians, and the excessive proliferation of periodical medical literature not only creates difficulties for the individual worker but makes it impossible for medical libraries in all but a few wealthy countries to maintain collections which are representative of the world's output.*

The rise of political and economic nationalism has seriously limited the individual's freedom to travel and study abroad, and the increasing responsibilities for health services undertaken by governments cannot be without effect on the fruitfulness of unofficial international relations in medicine. These factors, and the widening gap between the level of development of science and technology in the advanced and that in the less-advanced countries, necessarily increase the potential usefulness and range of activities of an intergovernmental health organization.

Early Quarantine Measures

The first intergovernmental health measures depended upon the theory of the contagiousness of certain diseases, and originated with precautions, often excessive, designed to restrict the importation of such diseases from one country into another. Although the segregation of lepers had long been common, maritime quarantine measures were first instituted when the pandemic of bubonic plague—the Black Death—devastated Europe in the fourteenth century. There is little agreement among writers concerning the date and place of the first introduction of maritime quarantine, and such agreement as exists is probably more correctly regarded as the product of faithful emulation than as the weight of cumulative testimony.

Some writers attribute this distinction to the Republic of Ragusa, on the eastern shore of the Adriatic, in 1377. It is said that seafarers suspected of being affected by plague were isolated for 30 days at a place distant from the

*As late as 1834, William McMichael, in his evidence to the Select Committee on Medical Education, said: "Most of our best treatises on physic are written in Latin; it is not possible to read them without a knowledge of this language." McMichael also said: "The science [of medicine] is advanced so much, that it is not expected that we should have voluminous publications."

harbour. Other writers credit the Republic of Venice with the introduction of maritime quarantine, but, as Beckmann (1846) showed, the accounts contained in earlier histories are completely at variance. Nevertheless, all are agreed that a 40-day period, or *quarantenaria*, became established as the usual period of isolation of suspected seafarers and sea-borne merchandise. As Beckmann points out, this period was probably chosen because the fortieth day of many diseases was held to be critical, and was also related to "various astrological conceits."

The first English quarantine regulations were drawn up in 1663, and provided for the isolation of suspected ships and their crews for 40 days in the Thames estuary (Simon, 1897). These measures did not, however, suffice to prevent the last and worst visitation in the form of the Great Plague of 1665–6, which is vividly recorded in the diary of Samuel Pepys and elsewhere.

The epidemic of plague which broke out in 1720 in Marseilles and ravaged the Mediterranean seaboard of France caused considerable apprehension in England, and the Government called upon Richard Mead (1673–1754) for advice, which he published as *A short discourse concerning the Pestilential Contagion and the methods used to prevent it* (1720). Mead declared his opinion that plague was contagious, as a result of which quarantine measures were prescribed.

To the modern mind it seems strange that the communicable nature of plague (and later of cholera) was ever in doubt. But until almost the end of the nineteenth century this question was the subject of lively controversy. Schools of thought were broadly divided into : (*a*) contagionists, who believed that epidemic diseases were spread by absorption of a morbific principle (not necessarily living) following contact with persons or fomites ; (*b*) miasmatists, who believed in a neo-hippocratic mixture of cosmo-telluric and atmospheric causes, to which were added, by the English sanitarians of the nineteenth century, "dirt" and "filth" ; and (*c*) the theurgists, who were content to regard Divine Providence as the principal aetiological agent, and the Old Testament as an appropriate technical reference work.

John Quincy, who in 1720 exploited the prevailing fear of plague by publishing an annotated translation into English of Nathaniel Hodges's *Loimologia* (first published in Latin in 1672), makes the following comment on the last-mentioned school : "Although too great a regard cannot be had to the Author of our Beings, yet care should likewise be taken, not to ascribe every Calamity to the immediate Exertion of the Almighty Power."

Cholera Reaches Europe

Fortunately, the plague epidemic in France did not extend to Britain. But in October, 1831, a new menace made its first appearance in the form of Asiatic cholera, which was imported into Sunderland by a ship from Hamburg (Hirsch, 1883). In the course of 1832 it spread over a great part of Britain, following commercial highways, coast routes, and rivers. Cholera had previously been known as a disease which was endemic in a few regions of India, but in the years of the first cholera pandemic (1817–23) it had spread far beyond India's frontiers. The second pandemic (1826–37) involved most of Europe, and in 1832 emigrants carried it to Canada and the U.S.A. The third pandemic (1846–63) reached Britain in 1848, and again in 1853, and there were further but limited outbreaks in Britain in later years. The extensive diffusion of cholera in Europe was one of the consequences of the increased speed of communication.

Koch's announcement of his discovery of the cholera vibrio was not to come until 1884, and there was within the medical profession no agreement on the means by which the disease was contracted or could be prevented. Contagionists and miasmatists represented completely opposing points of view, and there were eclectics, among them Hirsch (1883), who took the middle course of combining elements of both schools.

The appearance in Europe of this new and frightening visitation prompted some international exchanges of experience. Early in 1831, when fears arose that cholera might invade Britain, the Government sent Dr. William Russell and Dr. David Barry to St. Petersburg to study the manifestations of the disease. Later in the year, when these fears were realized, the great French physiologist, François Magendie, asked the Académie des Sciences to send him to Britain to study the epidemic.* The Academy assented, and Magendie arrived in Sunderland on December 2, 1831. On his return he deprecated the value of quarantine measures, and, when cholera struck Paris, proposed that samples of air from different parts of the city should be analysed. Later, a committee of Italian physicians arrived from Rome to study cholera in Paris. All these visits of investigation were fruitless.

The official British standpoint was unswervingly miasmatist and anti-quarantine. In a *Report on Quarantine*, published by the General Board of Health in 1849, the specificity of epidemic diseases was discredited and the conclusion was reached (Masters, 1947) that "the only real security against epidemic disease is an abundant and constant supply of pure air." Typical also of the British point of view was the comment of the joint editors of the fourth edition of Beckmann's *History of Inventions* (Beckmann, 1846), Dr. William Francis, editor of the *Chemical Gazette*, and Dr. J. W. Griffith, a physician :

> "It is a disputed point whether the plague is *even* contagious ; and the mass of evidence is in favour of its being so occasionally, but that the plague is usually not propagated in this manner. The disappearance of this pest from our own and most other countries of Europe is undoubtedly owing to the much greater attention paid to drainage, ventilation, and the prevention of the accumulation of filth in the streets, etc. When the peculiar atmospheric conditions upon which its diffusion depends are present, quarantine has proved insufficient to prevent its propagation."

In the report referred to above, the General Board of Health, which at the time included no medical member, expressed the view that the effectiveness of quarantine was "not a technical question, but one of evidence, on which a person capable of observation is as competent a judge as any physician." Considering the complete absence of scientifically based information on the aetiology of cholera at the time, this last contention was doubtless amply justified. In fact, the views of medical experts on cholera and other epidemic diseases were hardly more consistent than the present-day testimony of medical witnesses called by rival parties to a lawsuit.

Two circumstances had an important influence on the British tradition of opposition to quarantine measures. The first was the influence of the English sanitarian movement, which focused attention on the relation of poverty and squalor to the spread of disease. The second was the natural reluctance of a great maritime nation to countenance precautionary measures which imposed a severe handicap on shipping. In a study commissioned by the Fabian Society, Woolf (1916) said : "It became a plank in British foreign policy that her national interests required an

*Olmstead, J. M. D. (1944). *François Magendie*. New York.

unbending resistance to any interference with shipping." But he also pointed out that "cholera entered equally the closed ports of Greece and the open ports of Britain." Although the theoretical views of the contagionists have now been largely vindicated, it is also true that the practical quarantine measures adopted were often both onerous and futile.

International Sanitary Conferences and Conventions

The complete lack of agreement on the mode by which cholera and other epidemic diseases were contracted entailed a corresponding lack of agreement on means of prevention. There was no consistency in the different quarantine requirements—or lack of them—of the different nations, or even of different ports of the same nation, and in some cases the restrictions imposed constituted an intolerable hindrance to international communications and commerce.

It was in these circumstances that the French Government convened the first International Sanitary Conference, which was held in Paris in 1851 and was attended by one diplomatic and one medical delegate from each of twelve nations. The immediate object of the conference was to reach agreement on prophylactic measures against cholera, plague, and yellow fever, particularly in regard to maritime communications in the Mediterranean and the Black Sea. An international convention was drawn up, but only France, Portugal, and Sardinia ratified it, and the two latter powers denounced it 14 years later. A second International Sanitary Conference, consisting only of diplomats, was convened in Paris by the French Government in 1859, but was barren of results. During the nineteenth century a third International Sanitary Conference was held in Constantinople (1866), a fourth in Vienna (1874), a fifth in Washington (1881), a sixth in Rome (1885), a seventh in Venice (1892), an eighth in Dresden (1893), a ninth in Paris (1894), and a tenth in Venice (1897). These conferences were, however, of an essentially diplomatic character, and at all but the most recent of them such medical testimony as was available was so conflicting as to be an obstacle rather than an aid to international agreement.

The first International Sanitary Convention was not signed until 1892, by which time seven conferences had been held and 40 years had elapsed. This convention, which was unanimously ratified in the following year by the 14 signatory Powers, provided for protection against the introduction of cholera via the Suez Canal, which had been opened in 1869. The eighth conference resulted in a convention designed to limit the spread of cholera by land, the ninth in a convention for the sanitary regulation of the Mecca pilgrimage, and the tenth in a convention to guard against the introduction of plague.

In 1903, on the initiative of the Italian Government, an eleventh International Sanitary Conference was convened in Paris. One of the main achievements of this conference was the unification of earlier conventions (1892, 1893, 1894, 1897) in the light of contemporary scientific knowledge, and the result was the International Sanitary Convention of 1903, which was ratified by most of the participating States in 1907. This was the first convention to introduce some measure of international uniformity against the importation of cholera and plague. It was superseded by the conventions relating to maritime traffic of 1912 and 1926, and the latter was modified in 1938 and again in 1944. In 1933 the International Sanitary Convention for Aerial Navigation was signed at The Hague, and this was amended by a new convention in 1944.

In addition to the international sanitary conferences described above there were several national or regional health councils, which included diplomatic representatives of foreign powers. These were the Conseil Supérieur de Santé de Constantinople, which dated from 1839; the Conseil Sanitaire, Maritime et Quarantinaire d'Egypte, created in Alexandria in 1831; the Conseil Sanitaire International de Tanger, which had its beginnings in 1792 but was not constituted until 1840; and the Conseil Sanitaire de Teheran, created in 1867. The origins and functions of these regional bodies have been well summarized by Faivre (1908).

The history of the earlier international sanitary conferences is one of nations driven to international negotiation by a common danger but completely unable to reach agreement because of the limitations of scientific knowledge. As Sir Edward Mellanby* wrote: "The work of Government departments . . . in controlling disease can only be as good as knowledge allows it to be, and this knowledge has come, and can only come, by medical research."

It is amusing to read in the proceedings of the earlier conferences accounts of the voting taken on purely scientific questions—for example, whether cholera could be conveyed by water and foodstuffs. Beliefs are commonly most strongly held about matters on which the least information is available, and delegates who came to a conference with strong but unverifiable views on scientific questions were hardly likely to be influenced by a majority vote against them.

The difficulties and the failures of these earlier attempts of nations to reach agreement on health matters throw into relief the significance of the international health work in many fields that has been accomplished in later years and is now largely taken for granted. Yet the present International Sanitary Conventions are widely recognized as being imperfect instruments for the control of communicable diseases, especially as their signatories may delay ratification of their signatures for periods of years. On the authority of Articles 21 and 22 of its Constitution, much work has been done by the World Health Organization, and especially by its Expert Committee on International Epidemiology and Quarantine, on the replacement of the present conventions by International Sanitary Regulations which will automatically come into force for all Member States of W.H.O. after due notice of their adoption by the World Health Assembly (States may notify W.H.O. in writing of any reservations that they may wish to make).

The opposition of the English sanitarians to quarantine measures was based on speculative conceptions of the aetiology of epidemic diseases which were later shown to be false. But it is no uncommon happening in science for the right conclusions to be drawn for the wrong reasons, and the present tendency is to reduce quarantine measures to a minimum. In a paper presented at a recent session of the Expert Committee on International Epidemiology and Quarantine of W.H.O., the South African member, Dr. H. S. Gear, was repeating substantially what had been said by the English sanitarians more than a century ago when he commented that "quarantine barrier methods are of very limited value and . . . resistance of a community to infection is dependent upon its internal conditions."

Towards an International Health Agency

The idea of a permanent international agency to deal with health questions was seriously discussed for the first time at the fourth International Sanitary Conference at Vienna in 1874. Dr. A. Proust, a member of the French delegation, presented to the conference a plan drawn up

*Mellanby, E. (1943). *British Medical Journal*, **2**, 351.

by a drafting committee for an international Permanent Commission on Epidemics (Commission Permanent des Epidémies). The responsibilities of this committee were to be "purely scientific," and its main task was to be the study of the aetiology and prophylaxis of cholera, although it would also pay attention to other epidemic diseases. Vienna was proposed as the seat of the commission, which would be composed of physicians appointed by participating governments. All these recommendations were adopted by the conference, which also endorsed as the first objects of research of the commission the study of the rainfall and telluric conditions in the Eastern Mediterranean and Black Sea regions, the epidemiology of cholera in ships and ports, and the period of incubation of cholera.

At the fifth International Sanitary Conference (Washington, 1881) the proposal for an international health agency was revived in a modified form. As a result of this conference the idea of a single international agency for studying epidemic diseases fell entirely into the background, and instead there emerged a proposal for "a permanent international Sanitary Agency of Notification," with offices in Vienna and Havana. The former office was to collect and distribute information from Europe, Asia, and Africa, and the latter was to do the same for the Americas. The possibility of a third office in Asia was also mentioned. The governments of Spain (Cuba then being a Spanish possession) and Austria-Hungary were to fix the annual budget of the agency and notify participating governments of their share of the expenses. However, at subsequent international sanitary conferences no enthusiasm for an international health agency was manifested, and it was not until the conference of 1903 in Paris that the project was again—and finally—endorsed. Proust, who had taken the initiative at the conference of 1874, was still pressing in 1896 for the creation of a "Bureau International de Santé," which would be the organ (without any executive powers) of a "Union Sanitaire." The main object of the sanitary union as advocated by Proust was to protect the public health of Europe.

Implicit in all these strivings towards the foundation of an international health agency was, not a wish for the general betterment of the health of the world, but the desire to protect certain favoured (especially European) nations from contamination by their less-favoured (especially Eastern) fellows. Half a century later the Constitution of the World Health Organization is a measure of the tremendous moral evolution which has made it impossible to accept as part of the natural order the existence of preventable disease and suffering over a large part of the habitable globe.

Office International d'Hygiène Publique

At the eleventh International Sanitary Conference (Paris, 1903) the creation of an international health office was agreed upon, and at the Rome Conference of 1907, at which thirteen governments* were represented, the French Government submitted a definite plan for its establishment. The conference resulted in the Rome Agreement of 1907, which determined Paris as the seat of the new office—the Office International d'Hygiène Publique (O.I.H.P.). The Agreement admonished the office not to interfere in any way in the administration of different States, and defined its principal functions as the collection and distribution of facts and documents of general public health interest, especially those which related to infectious diseases—in particular, cholera, plague, and yellow fever. The O.I.H.P. was also obliged to publish a monthly bulletin—well known during the 40 years of its existence as the *Bulletin mensuel de l'Office international d'Hygiène publique*—which was to contain (i) legislation on communicable diseases, (ii) information on the spread of diseases, (iii) information on measures taken for environmental sanitation, (iv) public health statistics, (v) bibliographical notes. The number of governments adhering to the Rome Agreement increased until 55 were represented on its governing body—the Comité Permanent—which usually met twice a year.

*Belgium, Brazil, Egypt, France, Great Britain, Italy, the Netherlands, Portugal, Roumania, Russia, Spain, Switzerland, and the U.S.A.

The O.I.H.P. was not the first international health agency to represent many different governments, as the first Pan-American Sanitary Conference in 1902 resulted in the establishment of the Pan-American Sanitary Bureau (these conferences, and the Bureau, were originally designated "international" instead of "Pan-American"), but it was the first to acquire a truly international character. The O.I.H.P. was finally constituted in 1908, and in 1909 its seat and its secretariat were established in Paris.

However, even the long-delayed establishment of an international health office did not symbolize the desire of nations to unite in a common effort against disease. When Sir George Buchanan was nominated in 1914 to be the British delegate to the Permanent Committee of O.I.H.P., "its importance in British eyes was . . . mainly diplomatic."

The achievements of the O.I.H.P. during its first 25 years have been ably summarized by its former director, Dr. G. Abt (Office International d'Hygiène Publique, 1933). Its main preoccupation was with the administration and revision of the International Sanitary Conventions, and as a result of its efforts a new convention, replacing that of 1903, and including cholera, plague, and yellow fever within its provisions, was signed by 41 Member States. However, the outbreak of the 1914–18 war delayed the coming into force of the convention, and it was not until 1920 that 16 of the signatory governments ratified their signatures, other Powers adhering in later years.

The International Sanitary Convention of 1926, which replaced the 1912 convention, brought typhus and smallpox within its provisions and also made possible improvements in epidemiological reporting. It also established an international system for the control of rat-infestation of ships. Another important international convention for which O.I.H.P. was responsible was the Brussels Agreement of 1924, which dealt with facilities for the free treatment of venereal diseases in merchant seamen at sea- and river-ports.

Health Organization of the League of Nations

The disruption of life in Eastern Europe as a result of the 1914–18 war was accompanied by widespread epidemics, especially of typhus in Russia, which threatened to spread through Poland to Western Europe. The newly created League of Nations was empowered by Article 23f of the Covenant to "take steps in matters of concern for the prevention and control of disease," and in May, 1920, it established a temporary Epidemic Commission, which co-ordinated and helped to direct the work of health administrations in afflicted countries, and provided much-needed funds and medical supplies.

In the meantime discussions had been initiated on the creation of a single international health agency, under the League of Nations, and a plan for such an agency was accepted by the first Assembly of the League on December 10, 1920. Unfortunately, this ideal did not materialize until after a quarter of a century and another world war. Several signatories of the Rome Agreement of 1907—notably the U.S.A.—were not members of the

League, and this was the main reason for the continued independent existence of O.I.H.P. after the definitive establishment in 1923 of the Health Organization of the League of Nations. This organization consisted of (i) a Health Committee of 15 members; (ii) as an Advisory Council, the Permanent Committee of O.I.H.P., which appointed a proportion of the members of the Health Committee and was asked to advise on certain health problems; and (iii) the Health Section of the League of Nations secretariat, consisting of public health specialists assisted by auxiliary staff. The fact that the Permanent Committee of O.I.H.P. was at the same time the Advisory Council of the Health Organization ensured co-ordination of the work of these two international health agencies. In 1925 the Health Organization established an Eastern Bureau at Singapore—a development which had been foreshadowed in the plan for an international health agency adopted at the International Sanitary Conference of 1881.

The earlier activities of the Health Organization were characterized by a traditional preoccupation with the limitation of the spread of epidemic diseases, of which the epidemiological intelligence centres at Geneva and Singapore were a product. As the post-war wave of epidemics subsided, attention was turned also to methods of active immunization against communicable diseases and to the improvement of serodiagnostic tests, and later to wider aspects of the biological standardization of diagnostic, prophylactic, and therapeutic agents.

In 1934 the Health Committee decided to take up the study of nutrition, housing, and physical culture, and the work of the Technical Commission on Nutrition is perhaps one of the most widely known and understood examples of the health work of the League. Among the other Technical Commissions established were those on malaria and biological standardization (both of these permanent) and on cancer, housing, physical fitness, typhus, leprosy, medical and public health training, rural hygiene, and unification of pharmacopoeias.

The Health Organization marked a new departure in international health work, which was no longer concerned merely with the erection of sanitary barriers, but embraced a wide and ever-growing range of medical subjects upon which international agreement was desirable or in relation to which the more advanced countries could, through an international agency, confer benefits upon countries whose technical resources were more limited. The volume and range of the work can best be gauged by reference to the *Bibliography of the Technical Work of the Health Organization of the League of Nations, 1920–45* (League of Nations, 1945a). An especially valuable feature of the League's work was the award of travelling fellowships and the organization of collective study-tours.

World War II and After

On the outbreak of war in 1939 many of the activities of the Health Organization had to be suspended, although some—including the publication of the *Weekly Epidemiological Record*—were maintained in spite of great difficulties. The Health Committee appointed an emergency subcommittee, consisting of its chairman (Professor J. Parisot, France) and four members (Professor J. Balteanu, Roumania; Dr. N. M. Goodman, United Kingdom; Dr. B. Johan, Hungary; and Professor R. Sand, Belgium), and this subcommittee met in March, 1940.

By June, 1940, the staff of the Health Section had been so depleted by resignations and departures for national service that it included only two medically qualified members—Dr. R. Gautier, the officer in charge of the Health Section, and Dr. Y. Biraud,* head of the Epidemiological Intelligence Service. During the war Dr. Gautier visited both London and Washington to advise on plans for the post-war relief of occupied countries. In March, 1944, the Director-General of Unrra proposed that the Health Section should establish an epidemiological "research unit" in Washington, and in May, 1944, such a unit began work under the direction of Dr. Gautier, assisted by Mr. Z. Deutschman,† a former member of the Health Section of the League at the Eastern Bureau (the activities of which were suspended owing to the Japanese occupation), and later at Geneva. On January 1, 1945, this "research unit" was transferred to the staff of the Health Division of Unrra to form the nucleus of its epidemiological intelligence service. At the same time, duties relating to the administration of the International Sanitary Conventions which O.I.H.P. was now unable to perform were also transferred to Unrra. In October, 1944, Dr. Gautier had again visited London to participate in the International Conference on the Standardization of Penicillin, which was convened on the initiative of the Health Section.

Thus was the continuity of the Health Organization's work preserved under conditions of extraordinary difficulty, which included the deportation to Germany of Professor J. Parisot, the chairman of the Health Committee, and of one of its members, Professor René Sand.

In 1945 the San Francisco Conference, which led to the establishment of the United Nations Organization, approved the declaration calling for the creation of an international health agency, and the Economic and Social Council of the U.N. at its first session established a Technical Preparatory Committee, which met in Paris from March 18 to April 5, 1946, to prepare plans for an International Health Conference. The conference opened in New York on June 19, 1946, and on July 22 representatives of 61 States signed the Constitution of the World Health Organization. By its Constitution W.H.O. is the single international health agency, which not only inherits the functions of its precursors—including O.I.H.P.—but also has new responsibilities.

Only two of the States participating in the International Health Conference—China and the United Kingdom—signed the Constitution without reservation, and, as it could not come into force until a total of 26 Member States of United Nations had ratified their signatures, an Arrangement was concluded establishing an Interim Commission to continue essential international health functions and to prepare for the First World Health Assembly.

On April 7, 1948, the Constitution came into force, the First World Health Assembly opened on June 24, 1948, and the World Health Organization was established in its definitive form on September 1, 1948.

Note on W.H.O. Publications

For the general reader the best source of information on W.H.O. activities is the *Chronicle of the World Health Organization*, which has been published monthly since the beginning of 1947 and gives short accounts of conferences, meetings of expert committees, and field activities.

Full accounts of the proceedings of conferences, and especially of the annual World Health Assembly, are published in the series *Official Records of the World Health Organization*, which includes also the annual report of the director-general. The series was started during the time of the Interim Commission of W.H.O., and No. 1 contains the proceedings of the

*Secretary of the International Health Conference, New York, 1946.

†Assistant secretary of the International Health Conference, New York, 1946.

Technical Preparatory Committee; No. 2 is the proceedings of the International Health Conference; and Nos. 3 to 7 inclusive contain the proceedings of the five sessions of the Interim Commission. No. 9 is Part I of the Interim Commission's Report to the First World Health Assembly, and contains a detailed account of the work of the Commission from the date of its establishment in 1946 to the end of April, 1948. A Supplementary Report, including information on the later phases of the Commission's work, was issued as No. 12. No. 10 was the Provisional Agenda, with recommendations for programme activities, presented by the Commission to the First World Health Assembly. The proceedings of the First and Second World Health Assemblies are printed as Nos. 13 and 21 of the series, and the reports of the first five sessions of the executive board appear in Nos. 14, 17, 22, 25, and 26. No. 16 is the *Annual Report of the Director-General to the World Health Assembly to the United Nations,' 1948*, and covers the first four months' (September to December, 1948) work of the permanent Organization. The annual report for 1949 is No. 24.

Reports of expert committees and other advisory bodies were until the end of 1949 also published in the *Official Records* series (Nos. 8, 11, 15, and 19). At the beginning of 1950 these technical reports were published in a new series—*World Health Organization: Technical Report Series*—of which twenty-one have now either been printed or are being prepared for press.

Scientific papers relating to the work of the Organization are published in the *Bulletin of the World Health Organization*, and laws and regulations relating to health are reproduced, abstracted, or indexed in a separate publication—the *International Digest of Health Legislation*.

The *Weekly Epidemiological Record* contains notifications of first cases of pestilential diseases and other information of interest principally to quarantine authorities. The *Epidemiological and Vital Statistics Report*, which is published monthly, contains epidemiological and statistical information of wider interest. Non-serial publications, such as the *Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death* and the *International Pharmacopoeia*, are also published. All W.H.O. publications are published in the English and French languages, and there are also Chinese, Russian, and Spanish editions of the *Chronicle*.

The Public Information Division issues a monthly *W.H.O. Newsletter*, an occasional Special Features series, and numerous Press Releases.

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THERAPEUTIC SUBSTANCES IN THEIR INTERNATIONAL ASPECTS

BY

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In its work in connexion with therapeutic substances the World Health Organization is undertaking duties that could be performed only by an international body. For this work a Division of Therapeutic Substances has been established within the Department of Central Technical Services of the World Health Organization (which also includes the Divisions of Epidemiology, Health Statistics, and Editorial and Reference Services), and this Division comprises sections for biological standardization, unification of pharmacopoeias, drugs apt to produce addiction, and co-ordination of research. All these activities call for the pooling of knowledge and experience obtained in various countries and a study of standards or control measures applicable and acceptable to all governments.

The work of the first three sections is described below. "Co-ordination of research"—a rather unsatisfactory designation which has been adopted for want of a better one—includes at present the activities of W.H.O.'s Tuberculosis Research Office at Copenhagen, which is also described below, and some work on antibiotics. Because the latter work is only in its initial stages of development, no account of it has been included here. The first meeting of the Expert Committee on Antibiotics of the World Health Organization took place only in April of this year, and the committee's report will be presented at the Third World Health Assembly in May. If approved it will later be published in the *World Health Organization: Technical Report Series*.

Biological Standardization

A comprehensive account of international work on biological standardization has been given by Gautier.* In 1921 the Health Organization of the League of Nations decided to study the possibilities of establishing international standards for certain substances which could be assayed only by biological methods. A permanent commission was appointed in 1924 to adopt international standard preparations and to define units of activity. In 1935 an inter-governmental conference was attended by members from 24 countries, and the obligatory use by all countries of international standard preparations and units was recommended. A year later no fewer than 36 countries had officially adopted these standards. The conference also considered it essential that each country should possess an officially recognized centre with a trained staff in charge of the storage and distribution

*R. Gautier, *Bull. Hlth Org. L.o.N.*, 1935, **4**, 497; 1945, **12**, 1.

of the international standards. The burden on the two central laboratories—the National Institute for Medical Research, London, and the State Serum Institute, Copenhagen—was in this way relieved, since they would need only to maintain stocks of standard preparations at a single agency in each country.

Biological standardization proved useful in more than one respect: it enabled clinicians to administer accurate doses of substances whose weight bore no relation to the activity contained in different batches of the same preparation; it supplied health authorities with a means of evaluating biological products placed on the market; and it enabled manufacturers to express the potency of products marketed in different countries in the same units and research workers to determine the potency of unknown substances by comparison with the standard preparation and to measure this potency in terms of units irrespective of the method used.

At the outbreak of war international standards for 31 biological substances had thus been provided. During the war three new substances—heparin, vitamin E, and penicillin—were added to the list.

The International Health Conference having resolved to continue the technical work of the Health Organization of the League, the Interim Commission in November, 1946, adopted a resolution to establish an Expert Committee on Biological Standardization composed of a maximum of eight members. The committee was to advise the Commission on the international standards and units which were most urgently required. In December, 1946, the Secretariat sent to the members of the committee a note reviewing the existing international standards and containing proposals for future action. On the basis of the replies received to this note a provisional agenda of the first session of the committee was held in Geneva, June 9–13, 1947. A second session was held in Geneva on March 18–23, 1948, and a third session took place in London on May 2–7, 1949.

W.H.O. Expert Committee on Biological Standardization.—First meeting in the Palais des Nations, Geneva, June 9–13, 1947. Left to right are: Dr. A. A. Miles, director, Department of Biological Standards, National Institute for Medical Research, Hampstead (London); Dr. W. A. Timmerman, chairman of the committee and director, Rijks Instituut voor de Volksgezondheid, Utrecht, Netherlands; Dr. J. Orskov, director, State Serum Institute, Copenhagen, Denmark; Dr. Raymond Gautier, counsellor of the W.H.O. Interim Commission and head of the Geneva office; Sir Sahib Singh Sokhey, director, Haffkine Institute, Bombay, India (now Assistant Director-General, W.H.O.); Dr. M. V. Veldee, chief, Biologics Control Laboratory, U.S. Public Health Service, National Institutes of Health, Bethesda, Md., U.S.A.; and Professor E. Grasset, directeur de l'Institut d'Hygiène, Geneva, Switzerland. Dr. Jacques Tréfouel, directeur de l'Institut Pasteur, Paris, seventh member of the expert committee, is not shown in this photograph.

National Control Centres.—The committee re-emphasized the principle that each country should have a single national

centre for the storage and distribution of the international standards. The results of an inquiry made by the Secretariat showed that 26 of the original 57 centres existing before the war were still in operation. In countries with no centres or where existing centres no longer operated health authorities were consulted and further centres established.

Vaccines and Sera

Cholera Vaccine and Reference Strains

In connexion with the cholera epidemic in Egypt the W.H.O. Expert Committee on Quarantine at its October session, 1947, had recommended that the question of the standardization of cholera vaccine be referred to the Expert Committee on Biological Standardization. The committee considered that a stock of dried Ogawa and Inaba vaccines should be obtained as reference preparations in order that workers might have a means of direct comparison of their observations. While it was desirable that the reference preparations should be typical cholera vaccines, it was not essential that they should be of the highest protective quality, provided that the protective value of other vaccines could be expressed as a fraction or multiple of that of the reference preparation. It was further recommended that preparations of freeze-dried cholera cultures should be made available for reference purposes in the production of prophylactic vaccines. Laboratories would thus, by starting afresh from a lyophilized culture, be able to produce a vaccine of a potency as nearly uniform as possible as often as required. It was felt that the adoption of these measures would constitute a primary step towards an attempt to raise the immunizing value of cholera vaccines in general.

Cholera Monospecific Diagnostic Antisera and O Antigens

The Expert Committee, in response to a specific request for the establishing of an anti-cholera agglutinating serum, decided that for cholera diagnostic purposes dry reference preparations should be obtained of the Ogawa and Inaba O antigens of the *Vibrio cholerae* suitable for the immunization of rabbits for the production of antisera capable of distinguishing the true cholera and El Tor strains from all other cholera-like vibrios. The committee considered that while availability of authentic dry O antigens would render the preparation of standard diagnostic sera superfluous, it was desirable that so-called monospecific Ogawa and Inaba type sera, obtained by the removal of the common cholera agglutinins from ordinary anti-cholera sera, should be available on demand for the rapid differentiation of the sub-types of *V. cholerae*.

These reference preparations have all been completed and are at present undergoing comparative testing in laboratories in different parts of the world. If these tests confirm their usefulness and quality they will shortly be made available by the committee to workers interested in this field.

Anti-Pertussis Vaccine

After a detailed examination of the question, the committee decided to defer the establishment of an international preparation for a *Haemophilus pertussis* vaccine until enough information was available on the following points: (1) The relation between the immunizing potency in laboratory animals and in man. Large-scale field tests with pertussis vaccine are at present in progress in Great Britain and other countries, and it is hoped that by the end of the year further information on this point will be available. (2) The consistency of results obtained by independent workers when several vaccines are compared with a standard preparation.

Among the difficulties in reaching agreement about the potency of pertussis vaccines as measured by current methods are the variable interpretation of turbidity of vaccines in terms of bacterial content, and the variable results obtained in the intracerebral tests in mice. Samples were placed at the disposal of the interested workers by the National Institutes of Health of their turbidity standard—which is a suspension of particles of "pyrex" glass in water together with samples of the N.I.H. reference vaccine measured against this standard—with a view to obtaining opinions in various countries regarding the suitability of a pyrex glass suspension for a turbidity standard, and the N.I.H. laboratories further agreed to make available their strains of *H. pertussis* and mice for use in the intracerebral test.

Smallpox Vaccine

The committee considered the question of the investigations necessary for the definition of minimum requirements for smallpox vaccines. To this end it recommended that seed vaccinia virus used in different countries for the preparation of smallpox vaccines be tested in rabbits for its immunizing potency against freshly isolated variola virus.

Yellow Fever

The committee felt that close consultative liaison should be established with the W.H.O. Yellow Fever Panel, particularly with regard to the minimum requirements for yellow fever vaccine intended for use in conformity with the international sanitary regulations.

B.C.G.

In view of the fact that B.C.G. is a live organism the committee considered the establishment of a B.C.G. vaccine reference preparation as premature, but on account of the necessity for uniformity with regard to the vaccines in current use it recommended that the original B.C.G. strain kept at the Institut Pasteur should be made available to all countries, and that the preparation and utilization of the vaccine in each country should be centrally co-ordinated through the National Control Centre. The committee noted that the Institut Pasteur was now ready to prepare, and to distribute monthly, freeze-dried cultures of living B.C.G. for use as seed material to the laboratories producing B.C.G. upon the recommendation of the National Control Centres.

In 1948 Unicef addressed a request to the Expert Committee on Biological Standardization that the laboratories producing B.C.G. for the Unicef International Anti-Tuberculosis Campaign should be approved by that committee The Expert Committee, therefore, at its third session in London, discussed the conditions necessary for the production of a safe and effective vaccine, and drew up a set of minimum requirements with which the laboratories producing B.C.G. should conform in order to afford a guarantee of safety for the vaccine. These minimum requirements are published as an annexe to the committee's report (W.H.O. Technical Report Series No. 2). Furthermore, the committee has sent to each laboratory engaged in the production of B.C.G. for use in the Unicef campaign one of its members to carry out an inspection on the spot of the conditions under which the vaccine is produced; it is on the basis of a favourable report by the member that the vaccine is released for general use. The Institut Pasteur is at present engaged in the production

of freeze-dried B.C.G. vaccine, and the committee hopes that when certain problems in this connexion are settled it may be possible to review the position of the setting-up of a reference standard preparation for B.C.G. vaccine.

Tuberculin

In 1931 an international standard for old tuberculin was adopted—the unit being left undefined. The Expert Committee at its second session (1948) considered that the time had come for assigning a unit of activity to this preparation, and it was accordingly proposed that this unit be defined as the activity contained in 10 micromillilitres of the international standard preparation.

Purified Protein Derivative of M. tuberculosis (P.P.D.)

The committee at its first session recognized, in addition to the existing international standard for old tuberculin, that there was a definite need for establishing a separate international standard preparation for the Purified Protein Derivative (P.P.D.) obtained from *Mycobacterium tuberculosis*. A batch of P.P.D. preparation had previously been selected and retained to serve as the standard, should it prove suitable. The first testing of this material seemed to indicate that it possessed excessive sensitizing properties, and the committee at its second session entrusted the State Serum Institute, Copenhagen, with the distribution, for the purpose of comparative tests, of a new preparation as free as possible from sensitizing properties. Further tests of various preparations of P.P.D. have shown that their sensitizing properties do not debar them from use as standard preparations. The reaction that they produce in hypersensitive animals and man, however, are qualitative in a significant degree. Moreover, P.P.D. and similar materials prepared in different ways contain variable proportions of active fractions of different molecular weight. The committee therefore decided to defer the establishment of a reference preparation until its next session, and meanwhile recommended and arranged for a comparative biological and physiochemical examination of representative types of purified tuberculo-proteins in several laboratories.

Streptococcus Antitoxin

An attempt to standardize this serum had to be abandoned in 1928 owing to lack of a sufficiently accurate test-method and the existence of patent rights covering production. To-day these patents have expired and a satisfactory method of assay has been evolved, enabling a further review of this question to be made. A suitable preparation of streptococcus antitoxin has been procured by the Department of Biological Standards of the National Institute for Medical Research, London. Preliminary tests indicate that this preparation is suitable for an international standard. Estimation of its potency in terms of the U.S. National Institutes of Health standard streptococcus antitoxin is to be made by laboratories in different countries.

Tetanus Antitoxin, Toxin, and Toxoid

In the past the Permanent Commission on Biological Standardization has devoted much work to the assay of tetanus antitoxin. An international standard was adopted in 1928 defining the international unit as 0.1547 mg. At its second session, in 1948, the Expert Committee on Biological Standardization reviewed the evidence that tetanus toxin and tetanus antitoxin were heterogeneous and that as a consequence the assay of potency of tetanus antitoxins in terms of the international standard may yield different results according to the preparation of toxin used. It recommended that a concerted attack should be made on this problem from the chemical, physical, and physiological, as well as the immunological, standpoints. To facilitate the supply for interested workers it was arranged that samples of anomalous toxins and antitoxins should be collected and distributed on request.

The committee considered the extensive use made both of International and U.S. National Institutes of Health units in designating the potency of tetanus antitoxin and reviewed the circumstances in which the international unit was defined in 1928. On the basis of an inquiry instituted in various countries it was decided to re-define the international unit for tetanus toxin so as to bring it into equality with the U.S. National Institute of Health unit. This change has been duly advertised, and as from July 1, 1950, the international unit for tetanus antitoxin will be the specific neutralizing activity for tetanus toxin contained in 0.3094 mg. of the standard preparation.

A batch of tetanus toxoid prepared by the Pillemer method has been presented to the Expert Committee by an American firm. This preparation is being examined by various laboratories to test its suitability to serve as a reference preparation for characterizing the effective antigens in general use.

Diphtheria Toxoid

The committee has obtained a batch of highly purified diphtheria toxoid, which is undergoing collaborative testing in laboratories in different countries. This preparation may eventually be adopted as the international reference preparation.

It is to be hoped that these tests of the toxoids may also provide a solution to several outstanding difficulties which have arisen in connexion with the standardization of toxoids—principally that of whether the establishment of a unit of diphtheria toxoid, representing a certain weight of a standard preparation, will enable the potency evaluation to be made of all kinds of adsorbed diphtheria toxoids in terms of this unit. It is intended to hold a special subcommittee meeting of the Expert Committee on Biological Standardization in the near future, at which the whole question of the assay of toxoids will be discussed with a view to arriving at a solution to this problem.

Drugs

Digitalis

At the second session of the Expert Committee, the Department of Biological Standards, National Institute for Medical Research, was authorized to replace the second international standard of digitalis, which was nearly exhausted. A large blend of one British, two Swiss, and three American batches was made. The assays for determining its suitability and the ultimate designation of potency were carried out on frogs, cats, guinea-pigs, and pigeons. Statistical analysis showed that the method was sufficiently standard to permit a valid combination of results. The potency was assigned on the basis of the overall weighted mean; thus one international unit is contained in 76 mg. of the new preparation.

Sulpharsphenamine

The existing international standard for sulpharsphenamine having become exhausted, the committee had received a donation of a large and satisfactory batch of material from a British firm. On preliminary testing it had been found that the quality of this batch was superior to that of the old standard; it would seem fitting, therefore, that

the committee should fix a higher standard of potency for the new standard. To this end tests are in progress whereby the unitage of the new standard will be defined in terms of the old, using a new and better-designed test method for the assay of the activity and toxicity.

Hormones

Oestrone and Oestradiol Monobenzoate

The committee recognized that preparations of oestradiol monobenzoate and oestrone were no longer necessary as biological standards, owing to their synthetic production and to the fact that their characteristics can now be determined by physico-chemical means. The committee recommended, therefore, that the issue of international standards for oestrone and oestradiol monobenzoate should cease on January 1, 1951, and that this fact should be duly advertised. (See *W.H.O. Chronicle*—General Notices, July, 1949, Vol. 3, No. 7, p. 164.)

Androsterone

The international standard preparation is mainly used as a pure chemical standard, and as such it is obsolete as a biological standard. However, since the standard is still apt to be used for the assaying of androgen content of body fluids and the stocks of the standard are nearing exhaustion, it was recommended that the supplies of androsterone should be temporarily replenished, but that users would be warned that the distribution of this standard, when stocks again become low, will be restricted to those using it for biological assay.

Thyrotrophin

The committee considered the need for continuing with the preparation of a standard for thyrotrophin recommended by the Third International Conference on the Standardization of Hormones (1938) and interrupted by the war. The committee recommended that the opinion of interested workers should be sought on this matter.

Corticotrophin

The recent extension of the therapeutic uses of this hormone and improved methods of assay have made the provision of an international standard a matter of urgency. Negotiations are at present in progress for the procurement of a sufficiently large batch of substance suitable to serve as the international standard preparation.

Vitamins

Vitamin A and Vitamin D

It had long been recognized that beta-carotene was not the ideal standard of reference for determining Vitamin A, and in 1947 the question was referred by the Accessory Food Factors Committee of the M.R.C to the Expert Committee on Biological Standardization. Owing to recent progress in our knowledge of the synthesizing of vitamins A and D_3, it was decided that a subcommittee meeting on fat-soluble vitamins should be convened to advise the Expert Committee on Biological Standardization on the establishment of new standards both for vitamin A and for vitamin D. This subcommittee meeting was held in London on April 26–29, 1949, in connexion with the third session of the Expert Committee on Biological Standardization, which it immediately preceded. On the basis of the subcommittee's report, the Expert Committee recommended that the international standard for vitamin A should be crystalline all-trans vitamin A acetate and that the international unit should be the activity of 0.344 microgram of the standard preparation of crystalline vitamin A acetate. The existing standard preparation of pure all-trans beta-carotene should cease to be the international standard for vitamin A and should become the international standard for provitamin A.

The committee recommended that the international standard for vitamin D should be a preparation of crystalline vitamin D_3 and that the international unit should be the vitamin D activity of 0.025 microgram of the international standard preparation of crystalline vitamin D_3. The existing standard preparation of irradiated ergosterol should cease to be the international standard for vitamin D, but would be maintained as a reference preparation.

Anti-pernicious-anaemia Factor

The committee had at its second session discussed the unsatisfactory position with regard to national units of activity for liver extract preparations. It noted that a unit of activity based upon admittedly variable interpretation of the clinical effect of liver extracts on patients with pernicious anaemia instead of in terms of a standard preparation was not in accordance with the internationally recognized principles governing the establishment of standards and the measurement of potency in terms of units of activity based on a given weight of these standards. It was further aware of the possible dangers of adulteration of the extracts by the addition of folic acid in quantities sufficient to stimulate a reticulocyte response comparable to that induced by the anti-anaemic principle of liver extract. Owing to the absence of a satisfactory animal assay of anti-pernicious-anaemia potency at that time, it was difficult for the committee to take any action with regard to the establishment of an international standard. However, the subsequent isolation of vitamin B_{12} in 1949 provided a substance which might prove suitable as a standard preparation for the assay of the anti-pernicious-anaemia potency of extracts of liver and other animal tissues. The committee authorized the Department of Biological Standards, N.I.M.R., London, to procure enough pure crystalline vitamin B_{12} to serve as a standard preparation for the assay of anti-pernicious-anaemia factors and to ascertain the opinion of interested workers on the preferred size of a unit of activity.

Antibiotics

Penicillin

As the stocks of the international standard for penicillin were running low the committee had procured a preparation of pure penicillin G (II) to serve as the second international standard for penicillin, and authorized in laboratories of various countries an assay of the proposed second international standard in terms of the existing standard.

Streptomycin

The committee decided that the reference preparation of streptomycin held by the Department of Biological Standards, N.I.M.R., London, since 1948, should now be established as the international standard for streptomycin, and recommended that a preparation of dihydrostreptomycin should be obtained and held as a reference preparation. It was recommended that the potency of the international standard should be expressed either as units or as gram-equivalents of streptomycin base, or as both. Unit activity should, in the first place, be assigned to that weight of standard preparation which, so far as can be ascertained, contains one microgram of streptomycin base, thereby making the international unit as nearly as possible equivalent to the original Waksman unit.

Blood Groups

ABO

International standards for anti-A and anti-B agglutinating sera have been set up. Large batches of natural and stimulated antisera for each group were collected in the United Kingdom and the United States. These preparations were pooled and submitted for testing to 11 different laboratories in various countries. On the basis of these tests it has been proposed to assign to each antiserum an agglutinating potency of 256 international units per ml. of reconstituted serum. The avidity of the anti-A serum for A and A_1B cells, and of anti-B serum for B cells was found to be high enough to serve as a standard to be equalled by diagnostic antisera; and the avidity of the anti-A serum for A_2B cells, measured by the time taken for slide agglutination, is about one-third that desirable in diagnostic antisera.

Rh

It was not considered expedient at present to establish international standard preparations of the various anti-Rh sera, nor did the committee wish to make any recommendation about the notation of the Rh groups. It considered, however, that a universally acceptable definition of the term "Rh-negative" was desirable, and recommended that the following definitions should be adopted universally:

"The term 'Rh-negative' should, whenever possible, be applied to a human blood *donor* only if his erythrocytes are not agglutinated by three anti-Rh sera—namely:

(1) Anti-Rh_0 (Wiener notation); anti-D (Fisher–Race notation).

(2) Anti-Rh′ (Wiener notation); anti-C (Fisher–Race notation).

(3) Anti-Rh″ (Wiener notation); anti-E (Fisher–Race notation).

"Tests for the antigens represented by antisera (1) and (2) are conveniently made by the mixed serum anti-Rh_0′ (Wiener)—anti-D+C (Fisher–Race)—and for the antigens represented by antisera (1) and (3), by the mixed serum anti-Rh_0″ (Wiener)—anti-D+E (Fisher–Race).

"The antisera (2) and (3), however, are not always available. In this case, tests with antiserum (1) may be considered sufficient for specifying an Rh-negative donor, but it should be realized that the risk of incompatibility is thereby slightly increased. Tests with antiserum (1) anti-Rh_0 (Wiener)—anti-D (Fisher–Race)—are indispensable.

"The term 'Rh-negative' should be applied to a human blood *recipient* when his erythrocytes are not agglutinated by an anti-Rh_0 (Wiener)—anti-D (Fisher–Race)—serum. An Rh-negative recipient is not necessarily an Rh-negative donor."

Serodiagnosis of Enteric Infections

The Permanent Commission on Biological Standardization of the League of Nations had initiated an international inquiry with a view to the standardization of the serum diagnosis of enteric fever and the Widal test in particular. This work had been interrupted by the war. At its third session the Expert Committee recommended that eight horse antisera for the specification of agglutinating suspensions for use in the serodiagnosis of typhoid and paratyphoid infections should be prepared. Antisera specific for the following antigens will be made: *Salmonella typhi* (H), *Salmonella typhi* (O), *Salmonella typhi* (Vi), *Salmonella paratyphi A* (H), *Salmonella paratyphi A* (O), *Salmonella paratyphi B* (H), *Salmonella paratyphi B* (O), *Salmonella paratyphi*, non-specific (H). These antisera will be examined in different laboratories and, if suitable, they will be adopted as international standard preparations.

Serodiagnosis of Rickettsial Infections

Owing to the difficulty and impracticability of preparing purified rickettsial suspensions for serological diagnosis of typhus the committee recommended that it would be useful to prepare horse antisera for the specific identification of the *X* strains of *Proteus* for specifying agglutination suspensions to be used in routine serodiagnosis of rickettsial infections. Antisera for the following antigens will be made: *P.OX*19, *P.OX*K, and *P.OX*2. If found suitable they will be adopted as international standard preparations.

The committee wound up their discussions at their last session by reviewing the circumstances in which the three current methods of designating the potency of biological substances are valid. They considered these circumstances are:

(1) Whether or not the active principles in biological substances have been characterized by chemical and physical means, the potency of such substance should be expressed in *units* wherever the active principle of both standard preparation and preparations to be assayed may be heterogeneous.

(2) The expression of potency in *gram-equivalents* is valid, although not always desirable when the active principle in the standard preparation is known to be homogeneous and free from inert material, and the active principles in preparations to be assayed may be heterogeneous.

(3) Designation of potency in *grams* is justified only when the active principle in the standard preparation is known to be homogeneous and free from inert material and when the active principle in the preparations to be assayed is known to be homogeneous. In such circumstances, however, biological assay will be necessary only when expense prohibits the routine characterization of preparations by physical and chemical means.

Unification of Pharmacopoeias

The need for unification in the field of therapeutic substances has been increasing rapidly in the last decades owing to the development of science, to international research, and to the increase in travel and commercial exchanges between nations.

An international conference on the unification of formulae of potent substances was held in 1902, and a further conference was held in 1925 with representation from 31 nations. Shortly afterwards an agreement, giving the strength and description of 77 potent substances, was signed by a number of countries. This was revised in 1929; in the same year the Council of the League of Nations examined the question of the creation of a permanent secretariat for the Unification of Pharmacopoeias, and a technical commission of Pharmaceutical Experts was set up in 1937 by the Health Organization of the League of Nations to prepare a limited International Pharmacopoeia. This Commission had made considerable progress when the work had to be interrupted in consequence of the second world war.

In 1947 the Interim Commission of the World Health Organization resumed the work and established an Expert Committee of seven members, under the chairmanship of Dr. C. H. Hampshire, in order "to produce a draft international agreement for the unification of pharmacopoeias modifying and extending the existing agreement for the unification of all the formulae for potent drugs, and to present the draft agreement as an international pharmacopoeia, similar in form to the present national pharmacopoeias" (*Off. Rec. World Hlth Org.*, 10, 12, 19, 22). This committee has worked continuously since that time

and has met on five occasions. It is now approaching completion of its work for the first volume of an *International Pharmacopoeia,* to be published this year in English and in French, followed by a Spanish edition. This volume will contain descriptions of standards for some 200 drugs in general use, giving titles, definitions, and standards for identity, quality, strength, and purity.

Close contact with all other units working in related fields is being effected through the secretariat of the organization, particularly with other W.H.O. Expert Committees on Biological Standardization, Malaria, Venereal Infections, Antibiotics, etc.

Valuable information is also being received from other international organizations on subjects of common interest —e.g., symbols, reagents, weights and measures, doses, nomenclature, etc., from the International Union of Chemistry, the International Bureau of Weights and Measures, the World Organization on Standardization, and the World Medical Association. Moreover, the members of the Expert Committee can rely on the wealth of scientific information available from the pharmacopoeial commissions in their respective countries.

The articles in this first edition will consist mainly of drugs of established therapeutic value common to a number of national pharmacopoeias. The rapid advances in certain aspects of medical science make it difficult to lay down definite fixed standards at present for certain drugs, particularly among the antibiotics, and in order not to delay the publication of the first volume it has been found advisable to defer them to the addenda, which are to be published later on.

Addiction-producing Drugs

The tasks which W.H.O. has to fulfil in this field are of different character. It inherited from the League of Nations and the Office International d'Hygiène Publique at Paris certain obligations deriving from the different Opium Conventions. So far as the new synthetic substances of the methadone and pethidine type are concerned, a new Protocol was signed in Paris in 1948 and came into force on December 1, 1949, complementing these older Conventions. In all these cases W.H.O. is the competent authority for deciding whether a new substance is addiction-producing or not. Advice as regards this decision, which in part has binding legal force for the United Nations and the parties of the corresponding treaties, is given by the Expert Committee on Drugs Liable to Produce Addiction of W.H.O.

Two meetings of this committee have been held so far —one in January, 1949, and the second in January, 1950. Among the questions considered during these meetings the following might be mentioned: the consumption of diacetylmorphine has increased during the last few years in some countries to surprising levels. This fact seemed still the more alarming to the committee, as on the occasion of the 1931 Convention emphasis was already laid on "the highly dangerous character of diacetylmorphine as a drug of addiction and the possibility, in most if not all cases, of replacing it by other drugs of a less dangerous character." Although in the last year the situation so far as the consumption is concerned had improved to some degree, the committee expressed grave concern over this situation, particularly as some important countries continue to maintain that their physicians consider this drug indispensable for certain medical uses. Therefore Governments have been asked for information on the use or dispensability of this drug.

Another important task concerns the new synthetic substances of methadone, morphinan, and pethidine type. The addiction-producing character of the compounds of those types employed up to the present is without question, and one pethidine derivative, known under the designation "keto-bemidone," seems to be particularly dangerous from the standpoint of addiction liability. In general, W.H.O. recommended precautionary measures to be taken with regard to these substances. This recommendation has been accepted by the Economic and Social Council of the United Nations. The idea is to place substances of a particular chemical type under control until such time as they have been shown not to be addiction-producing.

Another item which should be mentioned is the definitions which had to be formulated for the new unified convention in the process of being elaborated by the Commission on Narcotic Drugs, United Nations. For "drug addiction" the following was accepted.

"Drug addiction is a state of periodic or chronic intoxication, detrimental to the individual and to society, produced by the repeated consumption of a drug (natural or synthetic). Its characteristics include: (1) an overpowering desire or need (compulsion) to continue taking the drug and to obtain it by any means; (2) a tendency to increase the dose; (3) a psychic (psychological) and sometimes a physical dependence on the effects of the drug."

It was also decided that expressions such as "habit-forming" should be replaced by "addiction-producing." There are many habits which are not addictions. Furthermore, the important principle was accepted that, according to all available evidence at the present time, any substance which is able to sustain an established addiction—i.e., will adequately replace the drug that has produced the addiction —must be regarded as also capable of producing an addiction.

This Expert Committee recommended, further, that every addiction-producing drug should be given a recognized common name by some authoritative body, in order to avoid long chemical designations as well as many different registered trade names for the same chemical substance. The realization of this proposal has been entrusted to the Expert Committee on the Unification of Pharmacopoeias, W.H.O., with the result that common names will be proposed not only for addiction-producing drugs, so that the international understanding in such a complicated matter as medicamentation will be simplified.

Attention is drawn to the development of the chemical, pharmacological, clinical, medico-social, and legal aspects of drug-addiction questions in their widest sense, also to substances which at present do not fall under the activities of W.H.O. but which may do so in the future.

Moreover, alcoholism, which had not been considered by earlier international health organizations, has become the concern of W.H.O. The effects of alcohol on the human organism, the aetiology of alcoholism, the determination of its nature and extent, the study of somatic as well as psychic and social factors which contribute to the development of this scourge, and the improvement of methods of treatment and of prophylaxis, are on the programme of studies to be undertaken.

B.C.G. Vaccination

Recognizing the need for scientific research in connexion with the mass B.C.G. vaccination programme of Unicef and Scandinavian Voluntary Organizations, and the unparalleled opportunity such a campaign offers for the world-wide study of tuberculosis, the Executive Board of the World Health Organization created a Tuberculosis Research

Office at its Second Session in November, 1948. In February, 1949, the Tuberculosis Research Office was established in Copenhagen in order to permit close working co-operation with the Joint Enterprise of Unicef and the Scandinavian Voluntary Anti-Tuberculosis Organization, and to undertake the responsibility of directing and supervising the tabulation and analysis of the statistical material collected in the B.C.G. campaign in various countries.

The B.C.G. campaign includes plans to tuberculin-test 50,000,000 children and young adults in Europe, and estimates that 15,000,000 persons will be vaccinated with B.C.G. By the first half of May, 1949, about 9,000,000 were tested and 4,000,000 vaccinated in Finland, Poland, Czechoslovakia, Yugoslavia, Hungary, Greece, Bulgaria, Austria, and Italy. The campaign has also been started in India, Ceylon, and North Africa, and plans are ready for the Middle East countries. It is expected that before long the work will be extended to East Asia and Central and South America. The wide geographical area involved, the large numbers to be tested and vaccinated, and the uniformity of procedures and materials used in the campaign are unique and unprecedented. An enormous number of observations on tuberculin sensitivity as well as records of vaccination have already been collected.

The compilation and analysis of these data require the greatest care and attention, and should provide not only an adequate documentation of the work of the campaign but also a valuable permanent record of the findings of the prevaccination tuberculin testings performed in various countries and areas.

During recent years much information has been accumulating which suggests that B.C.G. vaccination affords some protection against the development of tuberculosis, but decisive proof of this and the exact degree of protection are lacking. The statistical analysis of the records of vaccination and tuberculin testing carried out by the W.H.O. Tuberculosis Research Office should provide useful data on the protective powers of B.C.G. vaccine.

In order to encourage young people to gain wider experience in their work and improve their knowledge of languages by taking employment abroad, the Brussels Treaty Powers—Belgium, France, Luxembourg, the Netherlands, and the United Kingdom—have agreed on a Convention to facilitate exchanges of student employees between the five countries and to establish the principles by which such exchanges should be regulated. The Convention was signed by the Foreign Ministers at the meeting of the Consultative Council held in Brussels on April 17. It concerns student employees of either sex who may be employed in either manual or non-manual work. In general they will not be more than 30 years of age. The five Governments will exempt any necessary permits enabling student employees to stay in their countries and to take employment there from all taxes or charges other than purely nominal charges. In general the period for which they can stay in the country will be not more than a year, but in exceptional cases it could be extended for a further six months. No fixed numbers of student employees are laid down in the Convention, but it provides methods for regulating the numbers to be admitted by the various countries. The five Governments also agree to facilitate the exchanges of student employees either by setting up a central agency to supervise the application of the Convention or by other appropriate means with the help of organizations concerned with such exchanges. The Convention can be extended to nationals of any other country with the consent of all the five Governments. Last year the United Kingdom was visited by 704 student employees from the Brussels Treaty countries, of whom 101 came from Belgium, 241 from the Netherlands, 359 from France, and 3 from Luxembourg.

MEDICAL STATISTICS AND WORLD HEALTH

BY

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A World Health Organization could not function effectively without the aid of some medical statistics from most of its member States: as well try to conduct a global airway system without the aid of telecommunication. It is not enough to give directions and get the units moving; it is also necessary to measure their progress and know where they are. The Health Section of the League of Nations established an information system for epidemic diseases which proved its usefulness and continued to operate until it was incorporated in the World Health Organization. But the aims of W.H.O. extend far beyond the circulating of information on which countries can take action if they wish, and the "control" of epidemic diseases forms only a fraction of the whole programme of action.

The Aims of W.H.O.

Child health may be taken as an example, for it is known to be closely correlated with the infant mortality rate, which is not difficult to estimate. When countries are arranged in ascending order of this rate they fall into several broad groups. First come those with fairly complete medical certification of the cause of death and well-organized systems of vital statistics; next come those with poorly developed medical certification and vital statistics; and then those countries not yet possessing any system of registration but where infant mortality is known to be very high. It is not by accident that infant mortality and quality of medical statistics tend to run together, nor is this merely due to both being by-products of the quality of social and sanitary services. Whilst it is true that infant mortality can be brought down a long way by improving social conditions, guided by the experience of other countries who have had the advantage of good medical statistics, a point is reached beyond which a country is unable to reduce its rate further without guidance from *its own* statistics of mortality from different causes in various groups of its population.

The statistical concern of W.H.O. in this question of child health consists, therefore, in (*a*) assembling the national data in existence and drawing such conclusions as can be drawn from the imperfect material; (*b*) considering the faults in the data and how they can be removed by (i) international rules regarding definitions and mode of presentation of vital statistics, and (ii) advice and help to countries in establishing or improving their systems of collecting data; (*c*) enabling countries to benefit as fully as possible from experiences of other countries which have advanced further in the improvement of child health; (*d*) encouraging statistical researches into the various factors associated with child mortality and morbidity through the agency of National Committees on Health Statistics or their equivalents; (*e*) statistical supervision of international projects for improving child health so that their effectiveness may be measured and waste of money and effort minimized.

It is one thing, however, to make a tidy statement of aims such as the above, and another thing to see them realized, not only for child health, but also for other great problems such as tuberculosis and cancer. There is a natural inertia concerning statistics in any medical

assembly, which arises partly from dislike of the subject, partly from lack of understanding of its complexities, and partly from suspicion that statisticians like to pile up figures merely for the pleasure of doing it. Fortunately, in the case of the World Health Organization this inertia was largely overcome at the start, when certain responsibilities had to be taken over from other organizations—namely, the epidemiological information services, the revision of the *International List of Causes of Death* due in 1948, and the periodical reports on cancer of the uterine cervix.

Classification of Diseases and Causes of Death

For the *International List* revision much preparatory work had already been done by three countries working together to design a Statistical Classification of Diseases, Injuries, and Causes of Death to serve the purposes of morbidity and mortality; and when the Interim Commission of W.H.O. appointed an Expert Committee to revise the *International List*, that committee was able to continue the work at its first meetings at Ottawa and Geneva in 1947. An International Conference, convened by the French Government to carry out the Sixth Revision early in 1948, adopted the new classification and entrusted the Expert Committee with its completion, making at the same time strong recommendations to W.H.O. on the lines of action to be taken for developing and promoting good health statistics. These are being initiated, and considerable progress has already been made not merely in establishing the machinery but in setting it in motion.

At the First World Health Assembly publication in English, French, and Spanish of the new *International Statistical Classification*, in two volumes, was authorized; and the first volume in English became available for use in 1949 and has been used for national statistics of morbidity, including hospital in-patients and cancer registration, in England and Wales since the beginning of that year. It was also used there and in the United States of America and in Canada for coding the deaths in 1949 in parallel with the Fifth Revision of the International List (1938), with a view to testing the new classification and providing a statistical bridge for future comparability. The Spanish edition of the first volume has just been issued and the French edition is almost ready.

The second volume, of which the English edition has now been published, consists of an alphabetical *Index* of diseases, injuries, and causes of death, with the number of the category to which each is assigned. The *Index* was designed to include as nearly as possible every disease, and every reasonable name attached to a disease, which is likely to be entered on a medical record or certificate. Not all of the terms included are recognized as being good descriptive terms, and in this respect the *Index* differs from the index to a Nomenclature of Disease. It is not intended to tell physicians what they should write on certificates, but rather to which category of the classification what they write will be assigned; and also to enable anyone who has sufficient knowledge of medical terminology for the work of coding medical records to discover the proper category for anything found on them. Although cross-indexing was reduced to a minimum by various devices, the index contains 524 pages with more than 40,000 items, many of them not important enough to appear in the tabular list of included terms under each category printed in the first volume.

Construction of the *Index* has been a laborious task, carried out mainly in Washington under the direction of a subcommittee appointed for the purpose by the Interim Commission of W.H.O. in 1947. It is a good example of what can be accomplished by international team-work, for a great many people besides the subcommittee helped in its construction while living in Ottawa, Oxford, Geneva, London, and other places. The final work of editing and printing was done in Geneva, and the copies for use in Britain have been bound and published by H.M. Stationery Office. It is to be expected that faults and mistakes will be found in both volumes of the *Classification*, and that experience will show that some parts of it are unsatisfactory. In that case it is to be hoped that suggestions for improvement will be sent to the World Health Organization for consideration with a view to amendments being made in the future without necessarily waiting ten years.

Uniform Presentation of Statistics

The First World Health Assembly issued a set of Regulations for the use of the *Classification* and for uniform presentation of statistics derived from it. An important feature of these was the prescription of a standard form of death certificate, and the throwing of responsibility on to the medical certifier to decide which was the underlying cause of death when more than one morbid condition was present. Most countries have been making the selection of the principal cause for statistical purposes by means of fixed rules of precedence, a method which made coding easier but led to strange anomalies in death rates from some diseases. Diabetes, for example, was accorded a high preference in pre-insulin days, and it continued to kill people with little-diminished frequency according to the statistics of countries still using fixed rules. But in England, where the certifier has for long been able to distinguish between dying *from* diabetes and dying *with* diabetes, the death rates in early and middle life have fallen greatly.

The change to this new system of death-accounting has been a serious undertaking for many countries accustomed to using the convenient *Manual of Joint Causes* when more than one cause of death is stated; but it was recognized by them that knowledge of the causes of mortality depends ultimately on good certification by the physician in attendance, and that, if knowledge is to increase further, the aim must be to improve that certification by education and every possible means and then rely upon it. In many countries over one-half of the death certificates mention more than one morbid condition, and so long as these were dealt with by arbitrary rules of preference there was no incentive to try to understand and record their relative importance or sequence in a particular patient. In North America and Australia real progress was made during 1949 towards overcoming the initial difficulties of the new system, which was first introduced in England and Wales in 1940. A prospect of obtaining valid international comparisons of death rates from chronic diseases is at last opening up, at least in the great cities.

The Expert Committee on Health Statistics

Another decision of the First Assembly was to set up an Expert Committee on Health Statistics, which met for the first time in May, 1949. Amongst the recommendations then made which were approved by the Second Assembly were the appointment of subcommittees to establish international definitions of stillbirth and foetal death, to advise on cancer statistics (including the difficult matter of survival and recovery rates), and to examine the question of hospital morbidity statistics. Reports from these working parties of experts, and also from the second meeting of the parent

committee, have been presented to the Third Assembly, but at the time of writing it is not permissible to do more than refer to these in general terms. It can be said that on the one hand they point the way to removal of serious obstacles which have hitherto prevented valid international comparisons of foetal and neonatal death rates and of survival and recovery rates of cancer patients; and, on the other hand, they refer a number of problems on which statistical investigations are needed for the advance of knowledge, and which could be done in certain countries, to National Committees (or equivalent advisory committees) for Health Statistics.

It was seen clearly at the International Conference for Revision of the Classification of Diseases at Paris in 1948 that if studies of a statistical nature such as these were to be started in countries able to do them, for the benefit of all countries, some kind of national machinery for that purpose would need to be set up in most instances. A number of countries have already established National Committees for Health Statistics with this in view, and in others Advisory Committees on Medical Statistics have been appointed, consisting of specialists in medicine, surgery, obstetrics, paediatrics, pathology, psychiatry, public health, medical statistics, and other subjects. Research on such problems as birth weight in relation to the gestation period, classification of operative procedures, and the follow-up of cancer patients can be planned and supervised by such committees acting singly or in co-operation with those in other countries, the function of W.H.O. being to suggest the lines of work and prevent duplication of effort.

Most of this work concerns countries with fairly well developed health and statistical administrations, but the Expert Committee on Health Statistics has also suggested that W.H.O. should foster the building up of such medical statistical services as may be practicable in underdeveloped areas, offering expert advice if desired. It has also expressed its opinion that when large-scale projects for reducing the incidence of diseases are embarked upon by W.H.O. the advice of statisticians should be sought during the planning stage.

For all these activities a strong Secretariat for the newly constituted Division of Health Statistics is essential, and temptations to economize at the expense of those unpopular people the statisticians will have to be resisted. Diseases may not be "cured by statistics," and no doubt some have been conquered without much help from them, but it is certain that the great scourges of the present day stand little chance of being eradicated without team-work in which statisticians play their proper part.

A Convention signed last November by the Foreign Ministers of the five Brussels Treaty Powers—Belgium, France, Luxembourg, the Netherlands, and the United Kingdom—lays down that nationals of any of the five countries who are without sufficient means, and who are lawfully residing in the territories of any of them, may benefit under their medical and social legislation. Under the terms of the November Convention repatriation can take place only in certain circumstances. A Supplementary Agreement now signed states that the five will have recourse to repatriation only in exceptional cases, and then only when no humanitarian considerations would deter. Particular attention will be paid to the family ties and close associations which may bind the person concerned to the foreign country where he or she resides. The five have also agreed that repatriation should cover the husband or wife and children of the assisted person.

THE INTERNATIONAL CONTROL OF EPIDEMICS

BY

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In another article in this issue Dr. N. Howard-Jones has ably pointed out that international co-operation in the field of public health originated in successive attempts made by nations to defend themselves against invasion from epidemic diseases.

Such was indeed the only object of the first international health institutions, and the international control of epidemics has remained a fundamental and statutory obligation of all of them—of the Quarantine Board of Egypt, the Office International d'Hygiène Publique, the Health Organization of the League of Nations, and now the World Health Organization—even though the functions of each successive organization were gradually extended to meet the ever-expanding notion of what constitutes international health.

The international control of epidemic diseases demands, first, knowledge of the countries and places, ports in particular, where these diseases actually prevail and from which they are apt to be carried into other countries; secondly, knowledge of the means of propagation of these diseases, and, as a corollary, knowledge of the methods of controlling such propagation; and, finally, international rules for the sanitary control of international traffic.

The first point requires an efficient international epidemiological intelligence service, the second requires a machinery whereby the latest acquisitions of science may be brought into practice in international epidemic control, and the third requires sanitary legislation which is universally applicable to international traffic.

I shall briefly review the present situation as regards each of these items, and particularly their recent developments.

International Epidemiological Intelligence Services

Traditionally, countries have attempted to obtain information of epidemic diseases abroad by means of their consular agents in foreign ports, who sent news of the kind by mail. This system, which is still followed by some nations, is expensive, slow, and unreliable.

Exchange of information by diplomatic channels, as provided for by the early International Sanitary Conventions, was hardly more practical. Only too often the diplomatic representatives sent home the information handed to them by the local health authorities by ordinary mail only, so that infected ships could actually travel faster than the news concerning an epidemic outbreak. Obviously, this system was inadequate to check international transmission of disease. That is why in 1925 the Health Organization of the League of Nations set up an epidemiological station in Singapore, the most important shipping centre in the Orient. Some 180 ports in the countries bordering on the Indian and Western Pacific Oceans volunteered to keep the station informed telegraphically each week of their sanitary situation. The Singapore station in turn broadcast, through a series of wireless stations, the information thus received to health administrations and ships at sea.

One year after this revolutionary initiative the 1926 Sanitary Convention recognized the need for centralized collection and distribution of epidemiological information, and formally entrusted the Office International d'Hygiène

Publique with the task. Also, the use of telegrams was prescribed in the event of the occurrence of first cases of plague, cholera, or yellow fever, or epidemics of smallpox or typhus fever.

The same Convention recognized the need for the distribution of epidemiological intelligence on a regional basis and formally recognized the Pan-American Sanitary Bureau and the Singapore Bureau for the purpose.

Throughout the 'thirties, the "Office" and the League of Nations gradually improved the efficacy of their epidemiological intelligence services; the latter, in particular, developed a network of wireless stations (see map) capable of reaching health authorities of Asia, Europe, and the greater part of Africa, and also ships in the Western Pacific, Indian, and Atlantic Oceans, as well as in the Mediterranean.

Now, after a partial "blackout" during the war, when, for security reasons, some information was withheld from international circulation and Singapore and many of its transmitting stations were under Japanese occupation, progress has been resumed under the aegis of W.H.O.

The Singapore station, reopened by the British military authorities after the liberation of Malaya, was transferred to W.H.O. control in April, 1947. The Alexandria Bureau was later also transferred, when this service of the Arab League, heir to the Quarantine Board of Egypt, became part of the regional system of W.H.O. Naturally the Pan-American Sanitary Bureau has continued to act as a regional epidemiological centre for the Americas, closely linked up with the Geneva Headquarters.

W.H.O. Expert Committee on International Epidemiology and Quarantine.—Meeting on December 5–14, 1949. Left to right: Dr. F. de Tavel (I.C.A.O.), Mr. P. de Bellaigue (U.N.), Dr. G. H. de Paula Souza (Brazil), Dr. M. Gaud (France), Dr. K. C. K. E. Raja (India), Dr. R. Dujarric de la Rivière (France), Dr. F. L. Soper (U.S.A.).

Broadcasting of Information

The Singapore network of broadcasting stations was very soon operating again, governments providing the stations' services free of charge, since epidemiological, like meteorological, information was rightly considered to be a public need and function.

One of the notable improvements of the recent past is the daily broadcast from Geneva of a telegraphic bulletin dealing with the so-called "pestilential" diseases (that is, cholera, plague, yellow fever, smallpox, and typhus, which are the five diseases dealt with in the existing Conventions) and important outbreaks of other diseases in sea and air ports all over the world. Six transmitters deliver this bulletin to Europe and the major part of Africa and America.

National administrations to which the bulletins are addressed are in a position to arrange for automatic telegraphic relay to their interested services, both central and peripheral—that is, in sea and air ports. Thanks to the bulletins, quarantine officers may know when precautionary measures need to be taken against incoming ships or aircraft and also when such measures can safely be dispensed with—with resultant economy in operation of port health services.

An epidemiological code is now being developed, as a successor to the three editions of the League of Nations' AA code, to facilitate and cheapen international transmission of detailed epidemiological information. The code will provide symbols not only to cover many technical phrases but also to designate the administrative divisions and subdivisions of all countries. By means of grid maps it will indicate the location of outbreaks in places not marked on ordinary maps.

The wireless bulletins are regularly confirmed and complemented by weekly publications issued in Geneva (*Weekly Epidemiological Record*), in Singapore (*Weekly Fasciculus*), in Alexandria, and in Washington. These are sent, very largely by air mail, to health administrations in the various parts of the world. They contain, in addition to information on pestilential diseases, notes on major outbreaks of other communicable diseases, as well as details of vaccination requirements and quarantine measures imposed and withdrawn by the different countries. The latter information can be of considerable value, both to port health officers and to maritime and air transport companies whose passengers are affected by such measures.

In addition to the information relating to pestilential diseases received and distributed in accordance with the provisions of the International Sanitary Conventions, W.H.O. receives information on the prevalence of communicable diseases in general and on vital statistics concerning countries and a considerable number of large cities throughout the world. This information is systematically abstracted and published in the monthly *Epidemiological and Vital Statistics Report*, which contains also articles describing the recent distribution and trends of the most important infectious diseases. The *Report* may be regarded as a summary of State and municipal epidemiological and statistical periodicals issued in the various countries. Its figures are eventually checked and completed for publication in a volume of *Annual Epidemiological and Vital*

Statistics, which constitutes a reference work of value to epidemiologists and students of public health.

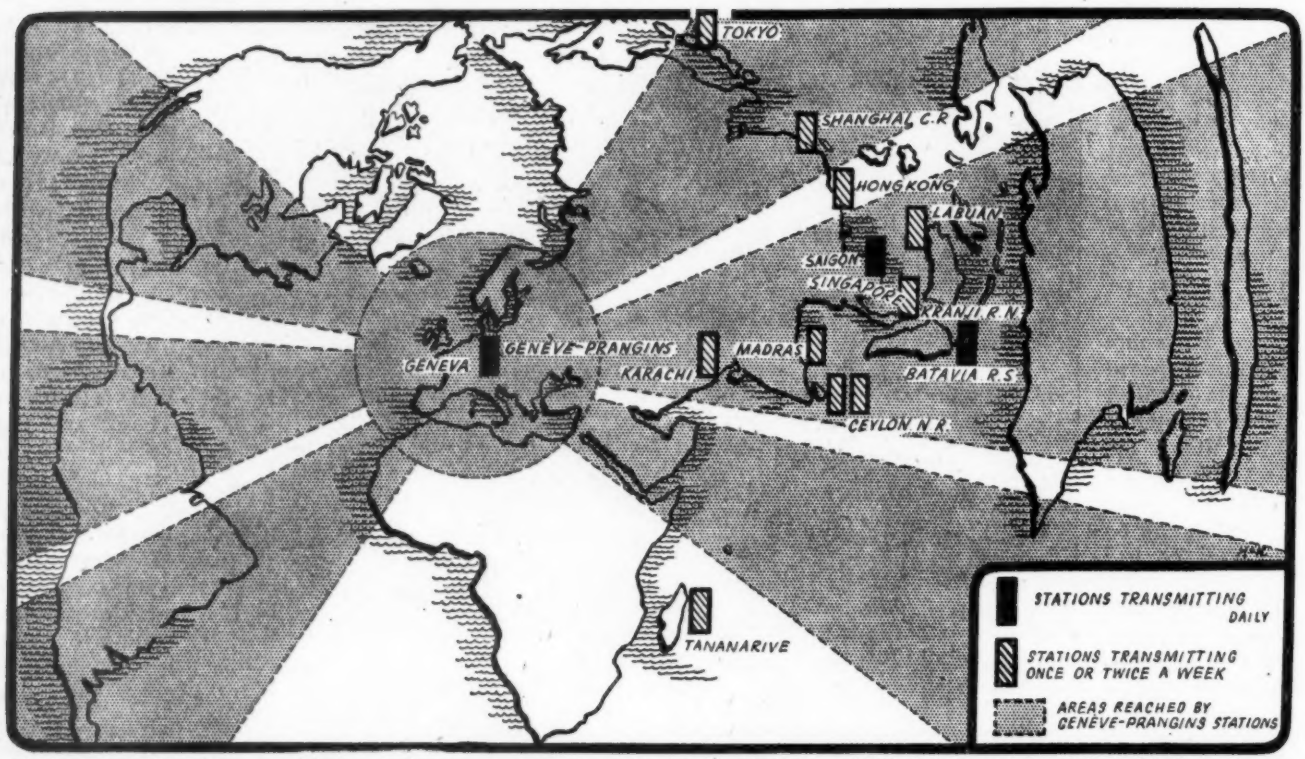
International Sanitary Legislation

In his paper on the Origins of International Health Work, Dr. Howard-Jones has shown that the International Sanitary Conventions which regulate the sanitary measures applicable to international traffic have come into being on account of a series of circumstances affecting certain groups of countries. As instances may be cited the danger of yellow fever in the Americas, the fear of the spread of Asiatic cholera into Europe, and the risk of importing plague into Egypt from the ports of the Eastern Mediterranean. Naturally, these Conventions were neither signed nor applied by all countries. Sanitary Conventions on maritime traffic were signed in 1912, 1924, 1926, and 1944, and on aerial navigation in 1933 and 1944, and each Convention is adhered to by a varying number of countries. The present situation as regards international sanitary legislation is therefore exceedingly complex.

The need for unification, simplification, and modernization of such legislation has been acutely felt, and in consequence the revision and consolidation of the existing International Sanitary Conventions was a task assumed by W.H.O. at the very beginning of its existence under its Interim Commission. The work, begun in 1947, is still progressing. Groups of experts have been constituted on cholera, plague, smallpox, typhus, and yellow fever, and their advice obtained on the measures which, in the light of modern knowledge of the epidemiology and methods of control of these diseases, should be applied to international traffic. Thus the experts recommended that, as an international sanitary measure, vaccination against plague and typhus should be replaced by the simpler method of disinsectation with D.D.T. of travellers coming from infected areas into a "clean" country. The W.H.O. Expert Committee on Insecticides was consulted about the most efficient methods of disinsectation of aircraft and even ships.

The Expert Committee on International Epidemiology and Quarantine, which is the committee of the Organization primarily entrusted with this revision and modernization of the existing Conventions, reviewed in 1948 the philosophy underlying these Conventions and laid down principles, later adopted by the Second World Health Assembly, which are to govern the future international sanitary legislation. This committee has as chairman Dr. M. T. Morgan, who brings to it the benefit of his experience acquired as President of the Permanent Committee of the Office International d'Hygiène Publique.

It is perhaps interesting to note that one of the most important of the above-mentioned principles is that countries should not rely entirely on measures taken at their frontiers to prevent the entry of epidemic diseases, but that they should endeavour to make themselves "non-receptive" to such diseases by internal action, whether directed against the insect vectors of disease, towards the purification of water supplies, or towards mass immunization of the population. Much has already been done along these lines in various parts of the world. *Aëdes aegypti* has been eliminated from a number of areas in South America, as a protection against yellow fever. In Western Europe and North America the provision of pure water supplies has meant the virtual extermination of the body louse, with resultant freedom from typhus during the last hundred years. It has also eliminated cholera from the same area. The fact that they possessed a pure water supply similarly protected the large cities of Egypt during the 1947 cholera epidemic. Systematic vaccination and revaccination against smallpox has proved the most effective means of eliminating the disease from many countries and of combating their reinfection. Vaccination has also proved the optimum method of protecting millions of South Americans and Africans against jungle yellow fever. In



Epidemiological Intelligence.—Wireless stations transmitting the epidemiological bulletins of W.H.O. The station at Alexandria is not shown.

this connexion may be cited the experience of French West Africa and French Equatorial Africa, where over twenty million people have been vaccinated, by the scarification method, simultaneously against yellow fever and smallpox.

New Regulations

In December, 1949, the Expert Committee on International Epidemiology and Quarantine prepared draft International Sanitary Regulations which, after careful revision by legal experts, are now being submitted to governments for observations, prior to discussion and eventual adoption at the Fourth World Health Assembly in 1951. These Regulations, made under the terms of Article 21 of the W.H.O. Constitution, will within a few months of their adoption by the World Health Assembly become applicable to the territories of all States members of W.H.O., unless formally rejected in whole or in part within a given time. This procedure is thus a distinct improvement over that required in the case of the diplomatic conventions of the past. Moreover, alterations to the Regulations that may be needed to adapt international quarantine practice to new scientific discoveries may be effected by mere decision of the Assembly, without the necessity for calling a special international conference to establish a new convention and for awaiting ratification by some 60 or 70 parliaments.

It is expected that within a few years the Regulations will be supplemented by a series of technical annexes outlining the methods by which certain provisions of the Regulations may be most efficiently implemented. The annexes would cover such subjects as methods for disinsectation of aircraft, diagnostic methods for certain pestilential diseases (cholera, for instance), vaccine standards, and vaccination procedures.

Later on, further Regulations may be drawn up concerning communicable diseases other than the classical five pestilential diseases, if and when new discoveries make it possible to prevent, by international sanitary measures, their transmission from country to country. The time for such extension has not come, however. For instance, in the present state of our knowledge it is not possible to conceive international sanitary legislation, destined to prevent the spread of influenza or poliomyelitis across frontiers, which would not interfere with international traffic in a manner out of all proportion to the results that might reasonably be expected.

When the new Sanitary Regulations come into force they will be administered by the Sanitary Conventions and Quarantine Section of the W.H.O. Secretariat, which is now responsible for the administration of the existing Sanitary Conventions. This section is headed by Dr. George Stuart, who played an important part in the 1944 Revision of the International Sanitary Conventions under Unrra. The section not only receives and issues telegraphic "notifications" on outbreaks of pestilential diseases and prepares the daily Geneva radio-bulletin mentioned above, but also settles, wherever possible, differences arising between countries concerning the conformity or otherwise of quarantine measures and requirements with the provisions of the Conventions. The few disputes which cannot be informally settled in this way are submitted to the decision of the Expert Committee on International Epidemiology and Quarantine.

International Co-operation in Research on Communicable Diseases

As has been shown above, W.H.O. has convened a series of expert groups and committees to assist the Organization in its statutory obligations connected with the International Sanitary Conventions and their replacement by W.H.O. Regulations. This, however, is only one aspect of the international co-operation sponsored by W.H.O. in regard to the control of communicable diseases.

Not all countries possess first-class experts in every field, and an important function of W.H.O. is to furnish expert advice to countries in need of it. Sometimes the information required may be given by a specialist on the staff of the W.H.O. Secretariat; in other cases a specialist, brought from a country where the required knowledge is available, may be sent by W.H.O. as a consultant to the country in need. There are, however, many instances in which the concerted opinion of a number of experts with varied technical and national backgrounds is essential to furnish the advice required. Often, also, such advice may be of direct use to several countries where similar conditions prevail in respect of a particular disease. In such cases the policy of W.H.O. is to convene an expert committee on the subject, and the technical information and recommendations contained in its report are made available to all countries.

If the knowledge assembled by the above means does not prove sufficient to solve the problem submitted to an expert committee, the committee may establish plans for further research, its members undertaking to carry out in their respective institutes or administrations the experiments required, following protocols agreed upon in common. When necessary, recommendations are made for complementary or parallel investigations to be carried out in other specialized institutions. After a year or so the expert committee is again convened; it reviews the results obtained from the research undertaken, and draws conclusions therefrom. Sometimes several series of experiments are required before the problem is finally solved.

Co-ordinated research of this kind was carried out for some years under the aegis of the Health Organization of the League of Nations. It proved then, as it is proving now, of inestimable value in accelerating scientific progress and in stimulating early and widespread application of the new knowledge obtained.

It is perhaps worth while to point out that the cost to W.H.O. of such co-ordinated research is comparatively small, being in most cases limited to the travelling expenses of the experts convened. The cost of the experiments undertaken is borne by the national institutions in which they are carried out, these institutions being, however, amply rewarded by the benefit they derive from the results obtained by others similarly engaged.

The secretariat of expert committees falls to the medical officers and other scientific staff of W.H.O. Their work is to collect information, prepare bibliographies and other documents for the committees, and assist the latter in preparing their reports. The Department of Advisory Services, responsible for work against malaria, tuberculosis, and venereal diseases, supplies the secretaries of the expert committees on these subjects. Secretaries for the expert committees on other communicable diseases are drawn from the Section of Epidemiological Studies of the Division of Epidemiology. Committees on cholera, plague, smallpox, yellow fever, typhus and other rickettsial diseases, bilharziasis, trachoma, and rabies have already been convened, some of them to several sessions, during the years 1947 to 1950, and a consultation of experts on brucellosis is planned for later in 1950. In 1949 a small group of specialists met to give expert guidance on immunization against the more common communicable diseases of childhood.

In 1949 the Second World Health Assembly decided that expert committees should be set up to cover additional

diseases, including influenza, leprosy, poliomyelitis, filariasis (onchocerciasis), and leishmaniasis. Only lack of funds and personnel has so far prevented active work being undertaken in respect of these latter diseases.

It must be mentioned that the convening of several of the expert groups has been made possible only through a grant specially provided by the Office International d'Hygiène Publique, whose functions have been officially transferred to W.H.O.

Whilst the research and study aspects of W.H.O.'s work against communicable diseases are, as mentioned above, the responsibility of the Division of Epidemiology, the sending of consultants to a particular country is the administrative responsibility of the Department of Advisory Services in Geneva and of the Regional Offices of the Organization. The number of instances in which such help has been extended to national administrations is already considerable; chiefly it has been in connexion with the most important social diseases—malaria, tuberculosis, and venereal diseases—but W.H.O. consultants have already lent their aid in controlling certain of the epidemic diseases (typhus in Afghanistan and in some of the South American countries, poliomyelitis in India and Chile, filariasis in Ceylon, to mention a few examples). It is unfortunately beyond the scope of this article to go into details of such action, of which some echoes are to be found in the W.H.O. *Chronicle*.

Total Eradication of Some Epidemic Diseases

An attempt has been made in the preceding paragraphs to summarize the role of W.H.O. in the international control of epidemics. In conclusion, I may perhaps mention what is one of the basic policies of W.H.O. in connexion with such control. This is the principle, advanced by several Expert Committees and endorsed by the Committee on Epidemiology and Quarantine and the World Health Assembly, that total eradication of certain epidemic diseases can be achieved and must be attempted.

This is no idle fantasy or boastful anticipation; diseases which have been real scourges in the past have now been eliminated from whole continents, and the process is still going on, so to speak, under our eyes. Most striking instances are afforded by smallpox and yellow fever, and, in connexion with the latter, the eradication of *Aëdes aegypti* from South American cities is an achievement of enormous significance. Eradication of anopheline species in Brazil, Egypt, Sardinia, and Cyprus opens up hopeful vistas in regard to possible victory over malaria. Where used systematically the new insecticides with residual action are proving effective against a wide range of insect-borne diseases, and their action is sometimes accompanied by side-effects as unexpected as they are beneficial. Cholera is gradually being relegated to the areas, comparatively limited in extent, where it is truly endemic. The cholera endemic zones have recently been delineated, and studies are now being made, under the aegis of W.H.O. and the Indian Research Fund Association, to determine the most effective means of ridding them permanently of the infection. Further international help may be required, but it will be a sound investment as compared with the maintenance by every country of a permanent organization against the invasion of cholera.

From the above it will be seen that W.H.O. has an important part to play in the international control of epidemic diseases, not only in rendering international barriers against them more effective, but in helping countries to stamp them out of their endemic foci, wherever possible, or in stimulating progress in the methods for their control.

THE WORLD HEALTH ORGANIZATION LIBRARY

BY

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The recognition of library service as an essential adjunct to the technical work of the World Health Organization and its Secretariat resulted in arrangements being made as early in its history as December, 1946, to deal with urgent library needs and requirements. During the third session of the Interim Commission, held in Geneva, March 21 to April 17, 1947, a thorough discussion took place on the nature and scope of the library and its relation to the Library of the Office International d'Hygiène Publique in Paris and to the Library of the League of Nations Health Organization, which was incorporated in the United Nations Library, Geneva.

Following negotiations with the Office International d'Hygiène Publique, the major portion of the library of that organization was moved in 1948 to Geneva and merged with the W.H.O. Library, thereby enriching W.H.O. with over 15,000 valuable journals and documents. A request had been made for a transfer to W.H.O. of the Health and Medical sections (the former Health Organization Library) of the United Nations Library. Because of the opposition to the idea of dispersal of the United Nations Library this transfer was not effected, but the policy of a long-term loan of material, as wanted, was adopted. Since the United Nations Library and W.H.O. Library share the same building, access to the material is easy, and co-operation between the two libraries is most satisfactory. The proximity to the large and well-stocked U.N. Library is a particular boon, especially in the field of bibliographic and reference works. Not many medical libraries have such ready access to the complete series of the *U.S. Catalogue and Cumulative Book Index*, the *British Museum Catalogue*, the *English Catalogue of Books*, the *Deutsche National-Bibliographie*, and the French, Italian, and Spanish bibliographic sources.

The basis of the W.H.O. collection has been formed by careful selection and purchase of books and journals covering W.H.O. fields of interest. The collection is particularly good in those subjects known as the five pestilential or "treaty" diseases—namely, plague, cholera, typhus, smallpox, and yellow fever. Recommendations for purchase are received from all members of the Secretariat. Conversely, the library draws to the attention of the specialists new publications in their particular fields. In order to do this current journals are scanned for book reviews, and publishers' catalogues and various current bibliographic sources from many countries are examined. When the Organization develops new fields of activity the co-operation of the appropriate section is sought at once, with a view to obtaining the necessary documentary material. Recently, basic collections have been acquired in the fields of health education, mental health, and nursing.

The library now numbers 5,000 catalogued books and about 2,000 bound periodicals, in addition to the 15,000 volumes received from the Office International d'Hygiène Publique. These figures do not include official documents, reports, and reprints. Of the 965 current journals received regularly, 785 are acquired through exchange with W.H.O. publications and 180 by subscription. Every effort is made to keep up to date the acquisition of annual reports of

health administrations, especially of those countries which are signatories to the W.H.O. Constitution. The following are among the special activities of the library.

Supply of Medical Literature to Member Governments

It has been the privilege of the library to assist in the provision of medical literature to member governments. From 1948 onwards 16,829 books and 6,363 journal subscriptions and many hundred photostats and microfilms have been supplied by W.H.O. to 20 member governments to give assistance in replacing collections, damaged during the war, to rehabilitate existing inadequate libraries, and to furnish nuclear sets of medical literature to countries where health services and standards of medical education are below average, but where now, with the co-operation of W.H.O., efforts are being made to raise the level. Since the war, lack of hard currency has been another reason why many governments have been unable to purchase basic foreign medical literature. One of the principles laid down in the constitution is that W.H.O. is to be an instrument through which the benefits of medical, psychological, and related knowledge are to be extended to all peoples "without distinction of race, religion, political belief, economic or social condition." As books go off to institutions in India, Burma, Ceylon, China, the Hashemite Kingdom of Jordan, Finland, Egypt, Greece, Hungary, Yugoslavia, Iran, etc., a particularly keen satisfaction is felt that the library is helping to implement, even in a small way, this vital principle of the constitution.

Special literature recommended by appropriate technical sections of W.H.O. is also ordered through the library and sent to advisory and demonstration teams in the field all over the world. Thus an entomologist attached to a malaria team which is to be sent to Persia may have collected for him, in addition to the basic malaria literature which will go to his team, photostats of articles on mosquitoes of Central Asia, Persia, etc., from Russian parasitology journals or entomological journals. If these articles are not available in the W.H.O. Library or in Switzerland, air mail soon brings microfilms of them from the ever-cooperative medical libraries in London, Paris, or Washington, D.C.

Reference Work

The reference work presents many interesting facets and gives deep satisfaction to the librarians in its wide variety of requests. These range from requests for the best material on the history of international health work and verification of the statement that Alexander the Great died of malaria, to the most recent reference on terramycin for a meeting of the Expert Committee on Antibiotics. A letter arrives from Hungary asking for literature on measures for reducing bacterial contamination in operating theatres; a French public health expert writes for a complete bibliography on the geography of disease; the Regional Office in India seeks advice on the best classification to use for its library; a W.H.O. nurse in Borneo writes for all the latest material on premature babies; the matron of a school of nursing in Athens requests all the latest books on tuberculosis; the Medical Supply Service of W.H.O. wants to know the measurements of a Bradford frame; the Health Education Section asks for a certain film on sex education made in Michigan; the Nursing Section wishes to receive at once six copies of *Teach Yourself Malay* for field nurses; a call arrives for the basic books on anthropology for orientation courses for trainees for field service; the Editorial Section requests transliteration rules, bibliographies on B.C.G., problems of homeless children, kwashiorkor disease, tuberculosis in merchant seamen, methaemoglobinaemia in infants caused by ingestion of water with high concentration of nitrates, "tropical risk" references for a Swiss inquirer, references on cybernetics, on paper chomatography. Such is part of the picture of a typical day in the life of a W.H.O. librarian.

The Library News

The *Library News*, which was begun in May, 1947, is a monthly roneographed publication averaging about 35 pages. It contains a list of books catalogued during the month, a list of periodicals newly received, and a list of annual government publications added to the library. Since May, 1949, a supplement containing selected books and periodicals on subjects of special interest to W.H.O. has been added to each number. The subjects covered so far are: maternal and child health, venereal diseases, epidemiology and infectious diseases, malaria and tropical diseases, tuberculosis, hygiene and public health, nutrition, and pharmacology and therapeutics. The *Library News* is distributed free of charge to members of the Secretariat in Geneva, to the Regional Offices, and to medical libraries and universities.

Card Index to Current Periodical Literature

Because so many requests were received for articles in current journals, and for up-to-date bibliographies, and in order to compensate for the serious delay in the publication of the *Quarterly Cumulative Index Medicus*, all those articles appearing in current journals of interest to the Secretariat staff are indexed by author and subject and then filed. Duplicate cards are sent regularly to all W.H.O. specialists who wish to be kept informed of current articles in their particular fields. An average of 4,200 cards are typed per month. This index is an invaluable aid not only in locating a desired article quickly but in the compilation of up-to-date bibliographies and in verification of references.

In addition to these services an analytical index is compiled for W.H.O. documents and publications and for all United Nations and specialized agencies' documents which are of particular interest to W.H.O. At the present time, material containing health legislation is received by the library from about 43 countries in the form of official gazettes, periodical publications, and slip laws. Items of interest for inclusion in W.H.O.'s *International Digest of Health Legislation* are indexed on cards by subject and by country, thus forming a useful aid in the compilation of that publication.

The library staff, which includes French, Swiss, Belgian, Danish, Dutch, Costa Rican, English, Canadian, and American workers, numbers 17. One of them holds a medical degree as well as a degree of library science, 7 are trained librarians, and 9 are clerical workers.

The library's chief task is to enable all members of the Secretariat to obtain with speed, efficiency, and economy the information and library materials needed in the execution of their duties and responsibilities. Its services are also extended on request to regional offices, health administrations, specialized agencies, and individual workers in the health field. The collection is still inadequate to meet the demands made upon it. Common to all young libraries are the growing-pains of adolescence, and the W.H.O. Library is no exception. It must be nurtured carefully, and a long-range point of view be maintained to ensure steady and continuous growth, for it has an important function in furthering the work of the Organization.

Medical Memoranda

Fracture of Thyroid Cartilage During a Sneezing Attack

Fractures of the laryngeal cartilages are not particularly rare, but the following case seems worth recording because of its aetiology.

CASE REPORT

A man aged 44 was seen in May, 1948, complaining of pain and swelling in the front of his neck, pain on swallowing, and a hoarse voice. Three days previously he had suffered a violent sneezing attack during which something clicked in his throat and was immediately followed by pain in the front of the neck. His voice became slightly hoarse two days after the sneezing attack.

On examination a swelling was noted over the thyroid cartilage with tenderness on palpation. A definite vertical fracture could be felt in the thyroid cartilage about ½ in. (1.25 cm.) to the right of the midline, and the two edges moved across each other with a fine click. The movement was very slight and at least one layer of perichondrium was presumed to be intact. On indirect laryngoscopy the ventricular folds were seen to be reddened and very slightly swollen, but there was a good airway and the vocal cords moved normally. The mucosa was not torn and there was no distortion. The fracture line did not show up on an *x*-ray film and the laryngeal cartilages were not excessively calcified for a man of his age.

On admission to hospital strapping was applied across the front of his neck, from the hyoid bone above to ½ in. inferior to the cricoid cartilage below. A tracheotomy set was ready at his bedside, but as the fracture was three days old and there was no marked oedema it was considered safe to try to avoid a tracheotomy, especially as qualified surgical assistance was constantly available on the premises. He was ordered not to use his voice. His diet was confined to fluids and semi-solids for the first three days; his voice was then normal and he found that he could chew and swallow solid food with very little discomfort. From then on he had a normal hospital diet, but voice-rest was continued.

After a week there was still a little tenderness over the thyroid cartilage, but no movement or click could be elicited. Six weeks after the sneezing attack there was very slight tenderness on firm pressure.

At the end of June, 1948, he had a further attack of sneezing. Once again his neck was swollen and tender, and the clicking and mobility could be felt as before. His voice remained normal. An *x*-ray film again failed to show up the fracture. The same treatment as before was followed by uninterrupted recovery.

Since then he has been perfectly comfortable, but admits to a little tenderness on firm pressure over the larynx. There is no mobility, and an *x*-ray film taken in June, 1949, again showed no fracture line.

COMMENT

I have been unable to find a report of any other case of fracture of the thyroid cartilage during a sneezing attack. How the fracture occurred has given rise to considerable surmise without any definite solution. The patient is sure that there was no direct trauma to the neck. He did shake his head violently backwards and forwards when sneezing. He was not wearing a collar, and his shirt was open at the neck without any front stud. The thyroid cartilage did not appear excessively calcified on the *x*-ray films.

The possibility of a congenital dehiscence in the thyroid cartilage has been considered—the cartilage developed in the lateral mesodermal plate not completely uniting with that developed in the dense ventral mesoderm and therefore fracturing easily. However, in these circumstances I would expect to see a gap at some point in the cartilage showing up on the *x*-ray film, but I may be wrong.

I wish to thank Mr. L. D. Mercer, senior aural surgeon at Salford Royal Hospital, for advice and permission to publish this case, and also Mr. H. P. Lawson for advice.

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Mumps Meningo-Encephalitis

In view of the article by Macrae and Campbell (1949) we are prompted to record the following case.

CASE REPORT

The patient, a schoolboy aged 12, had a definite history of contact with mumps 18 days previously. Apart from his being very excitable and subject to periodic attacks of headache and vomiting during the past three years, there was nothing of significance in his medical history.

On March 4, 1949, he had malaise, vomiting, headache, and an unproductive cough. Next day he became pyrexial and photophobia was manifest. Twenty-four hours later all symptoms were intensified and trismus and dysphagia developed. Swelling of the left parotid gland first appeared on March 7 accompanied by mental confusion, delirium, and screaming attacks. He rapidly deteriorated to a state of semicoma, and was admitted to hospital.

On examination his temperature was 102° F. (38.9° C.), pulse 96, and respirations 22. He was comatose. Enlargement of the left parotid gland, with trismus, made throat examination difficult. There was no evidence of exudate or membrane on the fauces, and no neck rigidity. Acetonuria was present. All tendon reflexes were increased, abdominal reflexes were absent, plantar reflexes were extensor both sides, and Kernig's sign was negative. Cranial nerve involvement was not noted. The abdomen was markedly scaphoid and a pronounced tache cérébrale was present.

A lumbar puncture was made under difficulties, as interference made the patient wildly delirious and resistive. The results of the cerebrospinal fluid examinations are shown in the table. Penicillin, 200,000 units, was given twice daily for four days.

Twenty-four hours after admission the right parotid became involved. The patient was now semicomatose and was able to open his mouth freely and to take fluids moderately well. Next day the improvement was maintained and he was able to carry out very simple instructions. There was, however, considerable slowing of reaction time and a marked slurring of speech. Papilloedema was not present in either eye and the retinae were normal. By the next day his temperature, pulse, and respirations had returned to normal and consciousness was fully regained. There was, however, a continued delay in reaction time and the speech remained slurred. The condition of the parotids and the nervous system remained unchanged.

By March 11 the general and mental conditions were much improved and the parotid swelling had to a great extent subsided. There was evidence of a commencing left facial paralysis of an upper motor neurone type characterized by loss of the left naso-labial fold with deviation of the mouth to the right on grinning. Next day the left facial paralysis was well marked, but for the first time since admission both plantar reflexes gave a flexor response.

By March 14 the patient showed no symptoms or signs of a lesion of the nervous system, the only residual abnormality being slight induration of the left parotid below the ear. There was no clinical evidence of pancreatitis or orchitis. The

report on a 24-hour specimen of urine indicated 12,000 Wohlgemuth units of diastase (normal daily output 8,000 to 30,000 units).

Cerebrospinal Fluid Examinations

Date	Appearance	White Cells	Polys	Lymphs	Protein Mg./100 ml.	Chlorides Mg./100 ml.
7/3/49	Sl. turbid	140	20%	80%	40	680
10/3/49	" "	250	20%	80%	60	680
17/3/49	" "	313	0%	100%	70	680
24/3/49	" "	123	0%	100%	60	—
31/3/49	Turbid	35	5%	95%	60	—
7/4/49	Clear	0	0%	0%	40	720

At all examinations the pressure was normal, organisms were not found, and culture was sterile.

An initial blood count showed: red cells, 4,400,000; leucocytes 4,500 (polymorphs 71%, lymphocytes 23%, monocytes 6%, eosinophils absent); haemoglobin, 82%; colour index, 0.92. Ten days later, although little change in the total cells was evident, the differential count showed a relative lymphocytosis of 41%, polymorphs 51%, monocytes 7%, eosinophils 1%. This is in keeping with the findings of Coe (1945), who noted a lymphocytosis which persisted for five weeks after the cessation of symptoms.

On March 19 the patient was entirely asymptomatic and manifested no evidence of any lesion of the parotid glands or nervous system. No further clinical abnormality was observed and he was discharged from hospital on April 16.

COMMENT

According to Steinberg (1944) the general characteristics of meningo-encephalitis are a sudden onset with pyrexia, severe persistent headache, vomiting, neck rigidity, positive Kernig's sign, tache cérébrale, and an infrequency of focal neurological symptoms or signs. In some recorded instances hiccup, lethargy, or irritability has been present but generally not to a pronounced degree. More rarely an accompanying neuromyelitis has been described (Church, 1946), the 3rd, 6th, 7th, 10th, and 12th cranial nerves and various spinal nerves being affected either singly or in combination. Typically the cerebrospinal fluid is sterile, of normal or slightly increased pressure, and contains between 50 and 100 cells (90–100% lymphocytes), and 50–75 mg. of protein per 100 ml., but findings substantially greater than these figures have been recorded. Generally the symptoms of meningo-encephalitis persist for three to six days, the temperature returning to normal and the subjective symptoms subsiding before the neurological abnormalities disappear. As a rule recovery is rapid and complete, with an absence of sequelae, although in some cases quadriplegia, aphasia, focal paralysis, and optic neuritis have been reported to persist for weeks or months after the acute stage has passed.

The interesting features of this case are the onset of meningo-encephalitis three days before the appearance of parotid swelling, the unusual severity of the encephalitis, the focal neurological manifestations, the rapid and complete recovery, and the persistence of the increased protein and lymphocyte content of the cerebrospinal fluid for approximately three weeks after the disappearance of nervous system symptoms.

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Pharyngeal Pouch with Pulmonary Symptoms

A pouch arising from the pharynx is a moderately common condition, but its importance as a factor in causing pulmonary complications has not been commonly recognized. Belcher (1949) draws attention to the frequency with which pulmonary complications occur in diseases affecting deglutition, and describes the syndrome as "dysphagia pneumonitis." He summarizes his paper as follows:

"In association with dysphagia, pneumonitis is due to small sporadic aspirations; pulmonary abscess to a major spill of oesophageal contents; fibrosis to a prolonged period of small aspirations; and lipoid pneumonia to this type of aetiology with the addition of a high fat content in the retained oesophageal material.

"'Silent dysphagia' is a possible cause of pulmonary lesions of obscure origin.

"Acid-fast bacilli found in the sputum of patients with mechanical dysphagia should be regarded as non-pathogenic until proved otherwise.

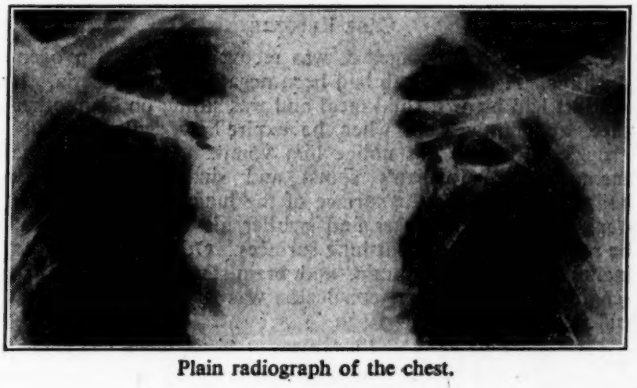
"The end-result of the syndrome is most frequently pulmonary fibrosis."

The following case, seen before Belcher's article was published, illustrates some of the points he makes.

CASE REPORT

A man aged 61 was referred to me in May, 1948, with the following history. Since 1934 he had difficulty in swallowing, with regurgitation of mucus. He had "chest trouble" since 1932, and "laryngitis," which was followed by a persistent cough. He had been investigated many times, and repeated sputum examinations had not revealed tubercle bacilli. During the previous six months his difficulty in swallowing had become much worse, and he considered that he brought back half his food. Solid food seemed to go down better than liquid.

Examination showed him to be a very thin man with a marked kyphosis and a very troublesome cough. On coughing, bilateral resonant swellings appeared in the neck. A radiograph



Plain radiograph of the chest.

showed fibrosis in the right apex and cavitation in the left. The scoliosis and kyphosis of the dorsal spine caused displacement of the heart and aortic shadows. On swallowing, barium passed into a large pouch at the level of the upper border of the manubrium. Despite the obvious pulmonary changes, operation was advised because the loss of weight was becoming serious and the vomiting was very distressing.

At the first stage an incision along the anterior border of the sterno-mastoid was made and the pouch freed, which proved difficult as there was no clear line of cleavage, and it was necessary to carry the dissection through to the opposite side of the neck; the pouch was in contact with the carotid vessels on the right side. This was inferred clinically by the bilateral swelling of the neck on coughing. As such a large amount of mediastinal tissue had been exposed it was deemed inadvisable to

excise the pouch at this stage. A thread stitch was placed at the neck of the pouch for identification later, the pouch itself was pulled upwards, the sterno-mastoid sutured to the pre-vertebral muscles, and the skin closed. At the second operation the pouch was excised. The excised pouch showed large areas of leucoplakia with slight wart formation, but microscopy did not reveal any malignant changes. When the pouch was turned inside out and stuffed with wool its appearance was almost identical with the syphilitic leucoplakic tongue frequently seen years ago, but which now seems to be rare. Ten months later the patient had gained 3 stone (19 kg.) in weight; the cough still troubled him, but was not so persistent, and produced only a little frothy mucus; no tubercle bacilli were found in this. A second radiograph showed infiltration of thick fibrotic type enclosing a large cavity (3 cm. transversely) in the left upper zone, with a fluid level. Some retention of barium was still seen in the remains of the pharyngeal diverticulum.

Apart from the cavity in the left upper zone, which was, in fact, contracting, the lungs appeared healthy. From his past history and present progress it seems unlikely that the lung fibrosis was caused by tuberculosis; it is much more likely to have been the result of the constant aspiration from overflow from the pouch.

EDRIC WILSON, F.R.C.S.

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Aspiration of Gastric Contents in Children and its Treatment

There seem to have been few cases in the literature of asphyxia from inhalation of gastric contents. The most recent appear to be those of Hodges (1932) and Osborn (1937); both of these were fatal and gave the impression that the illness is a rarity.

The following cases which occurred during one year in the practice of my principal are therefore of interest. It is thought that Case 3 illustrates the recognition and treatment of a condition which comes primarily into the province of the general practitioner.

CASE REPORTS

Case 1.—This boy, aged 5, was recovering from a pyogenic tonsillitis. A throat swab had been negative to diphtheria. He had just had his first solid meal and was sitting on his mother's knee, apparently well, when he expired suddenly without a struggle. She did not notice him vomit. At necropsy small haemorrhages (Tardieu's spots) and small emphysematous bullae were seen on the surface of the lungs. Gastric contents were found in the larger and smaller air passages and could be squeezed from the cut lung surfaces. Otherwise the organs, including the tonsils, brain, and brain-stem, appeared macroscopically normal. The conclusion was that death was due to suffocation by vomit.

Case 2.—This baby girl was seen at birth, when she weighed 5 lb. 12 oz. (2.69 kg.). On examination slight general cyanosis was present, which was attributed to atelectasis. She was next seen 12 days later, following an urgent call from the midwife. She had been bottle-fed at 9 a.m. At 11 a.m. she was noticed to be ill. When seen at 1 p.m. she was moderately cyanosed and moribund. She expired as an attempt was made to examine her. At necropsy the following abnormalities were found: The heart had thickening of both ventricles; the aorta was narrow, and from it the pulmonary artery arose; the main stem of the pulmonary artery communicated with the innominate and the left subclavian arteries; the pleural cavities contained 1 dr. (3.5 ml.) of clear fluid; there were haemorrhages on the surface of both lungs; the bronchial tree was filled with sticky stomach contents. There was free fluid in the peritoneum; the stomach was congested, and contained 2 dr. (7 ml.) of material identical with that in the lungs. The liver and spleen were chronically congested. It was concluded that the child had vomited, inhaled, and died of an asphyxia against which it had poor reserves to fight.

Case 3.—This patient weighed 7 lb. (3.18 kg.) at birth, after a normal confinement. He progressed well until the sixteenth day, when he was breast-fed at 7.15 p.m. At 11.15 p.m. he was found to be ill. He was able to take a feed at 8 a.m. the next day, but became very ill at 11 a.m., and when seen at 11.30 a.m. he appeared moribund and strikingly similar to the baby of Case 2 in its last moments. He was pale, with dark-blue lips and nails. He was flaccid. His respiration showed the Cheyne–Stokes phenomenon, with periods of apnoea lasting 15 seconds. On auscultation there were faint tumultuous sounds over both lungs. The child was then turned upside down and after ten minutes appeared somewhat better, with the periods of apnoea lasting only ten seconds; he was therefore suspended by his legs from the bottom of his pram, which was turned up vertically on end. Oxygen and nasal catheters were fetched from the hospital. When these arrived, 30 minutes later, the child was pink and struggling and crying in its uncomfortable position, and about 5 ml. of sticky yellow material, which turned litmus red, had come from its nose. The oxygen was considered unnecessary, but on being applied caused a further and dramatic improvement. The oxygen was discontinued after a few minutes. The child seemed to make an uninterrupted recovery, though the father, an oxygen technician, reapplied the oxygen during the night. Breast-feeding was recommenced the following morning, and adventitious sounds had disappeared from the lungs two days later, when chemotherapy was begun prophylactically. The child was breast-fed up to 9 months. At the time of writing he is 13 months old and weighs 24 lb. (10.88 kg.). He sat up at 6 months, has been walking for one month, and can say a few words. His heart is normal on clinical examination.

COMMENTS

The difficulty of diagnosis lies in the well-known fact that an effect of asphyxia is to cause vomiting and filling of the air passages, and that agonal regurgitation of food to the trachea and bronchi is common at any age. Rhaney and MacGregor (1948) overcame this obstacle by using ante-mortem digestion of the lung as their criterion.

Many cases of sudden death in infancy go unexplained. Vomiting and regurgitation are among the commonest of infantile upsets; they must occur often in situations of relative helplessness akin to that of the anaesthetized patient, in whom vomiting is a formidable hazard.

In all cases the diagnosis is not obvious from the history. Rhaney and MacGregor found that frank vomiting was noticed in only a minority of cases; the frequency with which they found pneumonia suggests that the condition is commonly unconsidered as a cause of severe illness.

I am indebted to Dr. Forbes, head of Sheffield University Forensic Department, for permission to use his necropsy conclusions, and to Dr. J. G. Cooney for permission and stimulation to produce this report.

V. G. S. DAMMS, M.B., Ch.B.

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Rhaney, K., and MacGregor, A. R. (1948). *Arch. Dis. Childh.*, **23**, 254.

The King Edward's Hospital Fund for London has published a useful pamphlet giving instructions to its hospital visitors. The Fund's visitors usually go in pairs—one medical and one lay—and make prior arrangements with the hospital for their visit. They prepare a joint report, which is submitted to the committees of the Fund, and no criticisms or comments are conveyed to the management of a hospital without first affording the responsible hospital officers an opportunity of explaining the relevant circumstances. This pamphlet should sharpen the visitors' observation and guide them to ask the right questions.

Reviews

THE CHICAGO-COOK COUNTY HEALTH SURVEY

The Chicago-Cook County Health Survey. Conducted by the United States Public Health Service. (Pp. 1,317. £6.) New York: Columbia University Press. London: Geoffrey Cumberlege. 1949.

This book gives a detailed survey of all the health services in the Chicago-Cook County district of the State of Illinois. The purpose of the survey is stated in the following words: "Large sums of money are being spent for health work in Chicago and Cook County. It was the duty of the Chicago-Cook County Health Survey Group to interpret for the citizens of this area, in so far as possible, how nearly they were realizing the full value of their investments in health services."

The subjects covered in the book include all branches of medical care besides those of purely public health interest. Hospitals, nursing problems, and the medical care provided by practising physicians in the area are all discussed fully. Each topic was surveyed by experts—for instance, the committee on housing had the services of an architect and a professor of sociology besides members of housing authorities. The director of the survey was Dr. K. E. Miller, Medical Director, U.S. Public Health Service, who had the collaboration of all branches of the Chicago-Cook County medical and social agencies.

Because of the wide range of subjects covered and the fact that the various chapters are written by different people it is difficult to assess the book as a whole, and the obvious tendency is to turn immediately to those chapters which are of the greatest personal interest to the reader of the moment. A large amount of information is packed into each section, and each committee has (in addition to its detailed survey) drawn up recommendations for improving the service on which it is reporting.

Much of the book deals with sanitation and environmental factors in public health. There are chapters on the present Chicago water supply and on the proposed new supply, and on the city's drainage schemes. It is interesting to see how the city's sewerage schemes have attempted to keep pace with the enormous development during the last century, when Chicago was growing so rapidly—the result has been a mixture of old and new types of drainage which is hard to control.

The chapters on infant and maternal welfare and on school health services contain some striking facts. Much of the infant welfare in Chicago is carried out by clinics run by voluntary agencies or by physicians. The low infant mortality rate (29.6 per 1,000 live births in 1945) speaks well of the care that infants receive there.

It is surprising to discover that 84% of school-children in the Chicago-Cook County district never have a routine medical inspection. Nearly all of these children live in Chicago itself, many more in public than in private schools. For all practical purposes both public and private schools in Chicago are without routine medical or nursing care, and the Public Health Department limits its school health activities to the control of infectious diseases. The survey recommends that school medical examination (which is required by State law) should be extended at once to all public schools, and advises liaison with educational departments to bring the scheme into operation. If all the recommendations were carried out Chicago's school medical service would resemble the school health services in this country.

Nursing appears to present as large a problem in Chicago as in Britain. The need for more nurses is stressed, especially in the public health services. By the standard which was set—1 nurse for 2,000 of the population—the public health nursing service in Chicago is seriously understaffed. Here again more work is done by voluntary nursing agencies than by publicly employed nurses.

The book gives an account of problems other than those of the public health in its sections on hospital and sanatorium accommodation. The problem of domestic and clerical staff is ever present, and since the larger hospitals suffer less than the smaller units it is recommended that the smaller ones should be abolished. There is a shortage of hospital beds and even the largest hospitals are seriously overcrowded. Their outpatient departments are unable to satisfy the demand for opinion and treatment. One is not surprised to notice the dry comment that many patients wait for attention longer than they should. The recommendations for improving these conditions include a scheme to prevent overlap of special facilities.

It would take too long to review all sections of the book, but, speaking generally, it gives an excellent account of a comprehensive survey. It does not describe everything in either the best or the worst terms possible, but it makes many carefully judged recommendations. Interest is added to a study of the text by the fact that so many of the problems and needs of Chicago parallel those of this country, and many of the recommendations for relieving overcrowding would be equally effective over here. Incidentally, it is a pleasure to read a book which is so clearly printed and well set-out.

J. M. MACKINTOSH.

CHILDREN IN THE TROPICS

Child Health in Warm Climates. By Dr. W. K. Blackie. Foreword by Sir Godfrey Huggins, P.C., C.H., K.C.M.G., F.R.C.S. (Pp. 182. 7s. 6d.) London: Longmans, Green.

Any author who has attempted to write a book or report on the technical aspects of a medical subject which is intended for both laymen and doctors will know that the task is most difficult—perhaps impossible. Dr. Blackie's small volume is written primarily for parents and nurses, but he hopes doctors may find some assistance from it. The result is likely to be that, while a few parents of unusually robust nervous constitution will be able to read it without being terrified by the medical descriptions of serious disease, many readers will be in danger of developing phobias for their children's welfare. It may, of course, be argued that every parent who so desires can easily obtain access to medical literature, and we know that some do in fact upset themselves in this way and create for their children an environment of undesirable nervous tension. But it is a doctor's duty to do what he can to protect his patients from such dangers, and there are strong arguments against placing in the hands of their parents a volume which provides general information about the management of children and prevention of disease, and includes details of diagnosis and treatment.

Dr. Blackie's book contains much sound advice. Chapter I, on sleep, is full of common sense, and parents who do not appreciate how important sleep is to children would do well to read it, whether they live in a warm climate or not. But the second chapter, on diet, shows the author's difficulties in trying to give instruction to all sections of his public. There will of course be some parents who can understand the following sentences (p. 17):

"Protein is a complex substance which enters into the basic structure of all protoplasm. Chemically it is made up of a series of smaller units termed amino-acids which combine to form a wide range of protein molecules," but many will not. Nor will they be much wiser when they read (p. 18): "Fats consist of glycerine in organic combination with fatty acids. During the process of digestion these two components are split off by means of a fat-splitting enzyme secreted by the pancreas and released into the duodenum." For the average parent this sort of language cuts no ice; for the nurse it is more suitable; for the doctor it is, or should be, too elementary. And when, later in this chapter, the author describes the symptoms of some vitamin deficiencies, he has to write of subjects that are quite unsuitable for discussion in a parents' handbook—such topics as peripheral neuritis, oedema, and acute cardiac failure. The conscientious mother who is naturally anxious that her child should not lack calcium in his diet will read (p. 36): "Calcium deficiency in childhood soon leads to serious deformities in the bony skeleton which may be perpetuated throughout life"; and on the next page she is likely to be horrified by vivid descriptions of tetany and laryngismus stridulus. The chapter on protection against the tropical sun will be useful to parents, and that on the protection of children against infections is adequate and valuable. But the article on protection against tropical disease is unsuitable for parents and too elementary for doctors.

Finally, a plea must be made for greater accuracy in detailed instructions for parents. For instance, if vitamins A and D are really necessary for children they should be recommended in approved dosage and not according to the following directions (p. 59): "The Vitamins A and D are contained in cod-liver oil and halibut. They may be administered as a few drops of an emulsion of these oils or as a drop of concentrates such as ostelin or radiostoleum."

NORMAN B. CAPON.

TUBERCULOSIS IN NEW YORK

Tuberculosis Reference Statistical Year Book. New York: Tuberculosis and Health Association. 1948. No price.

An accurate assessment of the prevalence of tuberculosis in the population as a whole and in different sections of it is an indispensable background to the planning of a tuberculosis campaign. The background in New York is given in admirable form in this yearbook, which excels its predecessors in the amount of information it contains. Statistics for New York City are given in great detail, but sufficient information is provided on trends in tuberculosis in the rest of the United States, in South America, and in Europe, to place the New York problems in proper perspective.

In New York the death rate from tuberculosis was 38.6 per 100,000 in 1948, compared with 39.3 the previous year. The slight improvement was solely in the white population: their death rate was 29 per 100,000, but in the coloured population it was 159. The fall in death rate over the past 28 years was 75% in the white population and 42% in the coloured population. Striking differences in different sections of the city are noted, rates rising from 14–19 in Brooklyn to 183 in Central Harlem. During the five years from 1944 to 1948 the tuberculosis death rate fell by 23% in Queens (from 31 to 24), but only 4% in Manhattan (80 to 77), the key borough of the city. The total of new cases is increasing each year, and the authors of the report believe that this represents a real increase.

Tuberculosis is still the outstanding health problem, and it is estimated that during the five-year period 1944 to 1948 a quarter of a million lives were taken by the disease in the United States. Tuberculosis "occupies first place as a cause of loss of future working lifetime. On the evaluation possible at the present rate of earnings, it would appear that in New York City alone the lives cut off by tuberculosis involved in a single year a possible economic loss of over $143,000,000, exclusive of the cost of the care given to the sick by the community."

MARC DANIELS.

MODERN CARDIOLOGY

Diseases of the Heart. By Charles K. Friedberg, M.D. (Pp. 1,081; illustrated. £2 17s. 6d.) Philadelphia and London: W. B. Saunders. 1949.

There have been notable advances in cardiology in the past few years, largely because of the development of new techniques, particularly unipolar and multiple chest lead electrocardiography, angiocardiography, and cardiac catheterization; at the same time there has been much therapeutic progress. No textbook of cardiology previously published has managed to keep pace with all this work, but Dr. Friedberg has succeeded in doing so, and must be congratulated accordingly.

There are about 1,000 pages in this book, yet it is throughout concise, clear, and easy to read. Little of importance has been omitted and a great deal has been included. The author has a refreshing physiological approach to most subjects, and facts are always given accurately so far as they are known. The literature is reviewed where it is pertinent to the text, and one is impressed by the selection. The only criticism is the relative scarcity of figures, which may explain why such a monumental work could have been produced so quickly (many of the references are right up to date). Dr. Friedberg has performed a valuable service to medicine and cardiology, and there can be little doubt that his book will become a standard work on the subject with few equals, past or present.

PAUL WOOD.

BOOKS RECEIVED

Review is not precluded by notice here of books recently received

Osteopathy and Manipulation. By J. Cyriax. (Pp. 92. 6s.) London: Crosby Lockwood. 1949.

Trophic Nerves. By R. Wyburn-Mason, M.D., M.R.C.P. (Pp. 1,083. 75s.) London: Henry Kimpton. 1950.

The Practice of Chiropody. By K. C. Jones. Foreword by N. C. Lake, M.S., F.R.C.S. (Pp. 270. 42s.) London and Sydney: Angus and Robertson. 1948.

The Sociology of the Patient. By E. L. Koos, Ph.D. (Pp. 264. 25s. 6d.) New York, London, and Toronto: McGraw-Hill Book Company. 1950.

Medical Management of Gastrointestinal Disorders. By G. Cheney, M.D. (Pp. 478. $6.75.) Chicago: The Year Book Publishers. 1950.

Ecology of Health. Edited by E. H. L. Corwin, Ph.D. (Pp. 196. 20s.) London: Geoffrey Cumberlege. New York: The Commonwealth Fund. 1949.

Social Work in the Current Scene. (Pp. 385. 38s.) London: Geoffrey Cumberlege. New York: Columbia University Press. 1950.

La Chirurgia delle Malformazioni Congenite del Cuore e dei Grossi Vasi. By G. D'Errico. (Pp. 156. No price.) Naples: Morano. 1950.

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WORLD HEALTH

The third annual Health Assembly of the World Health Organization will during the next three weeks lay down the policies of the World Health Organization, review and approve the budget and the reports of the Board and the Director-General, and take "any other appropriate action to further the objectives of the Organization." The Assembly also has the authority to adopt regulations on the ways of preventing the international spread of disease, on the nomenclature of disease and causes of death, on diagnostic standards for international use, and on standards relating to biological and pharmaceutical products. Except for those countries which may notify the Director-General of reservations about particular regulations, they come into force after a specified period for all member States of W.H.O. In the field of health, then, W.H.O. has an important legislative function, the legislation, be it noted, being of a permissive character. The body which submits to the Health Assembly the general programme of work and which subsequently gives effect to the decisions and policies of the Assembly is known as the Executive Board. It is composed of 18 members, each one of whom represents a separate member State. The third tier of the W.H.O. structure is the secretariat, presided over by the Director-General, Dr. Brock Chisholm, an article by whom appears at the beginning of this week's *Journal*, an issue devoted largely to international health.

As Dr. Chisholm points out, W.H.O. was not set up as a "supranational" health administration to take over the functions of national health authorities: it was established "to help those authorities directly, by putting at their disposal the knowledge and the skill needed for the improvement of their own health services and, indirectly, by mobilizing all available resources for the solution of problems which lend themselves to international action." In addition to this central provision for policy making, execution, and administration, W.H.O. is setting up six regional offices whose areas of operation are shown in the map on page 1024. Those offices now actively working are in Alexandria for the Eastern Mediterranean Region; in New Delhi for the South-east Asian Region; and in Washington, D.C., for the Americas—this is operated by the Pan-American Sanitary Bureau pending its final integration with W.H.O. There is as yet no regional office for Europe, although in fact its needs are at present catered for in the W.H.O. Headquarters in Geneva. Regional offices have yet to be established for Africa and also for the Western Pacific Region.

Such in brief is the ground plan of the inter-governmental body known as the World Health Organization, one of the specialized agencies of United Nations. Other specialized agencies are Unesco, the Food Agriculture Organization, the International Labour Office, and the International Relief Organization, with all of which W.H.O. shares common problems. W.H.O. did not, like Athene out of the head of Zeus, spring suddenly into being out of United Nations. As Dr. Howard-Jones in his interesting article points out, the origins of international health work certainly go as far back as the fourteenth century. At the Eleventh International Sanitary Conference in Paris in 1903 it was agreed to set up an international health office. The Rome Conference of 1907 established in Paris the Office International d'Hygiène Publique, which for 40 years published a monthly bulletin containing information on epidemic diseases, environmental sanitation, and public health statistics. Before this, in 1902, the Pan-American Sanitary Bureau had been established. In 1923 the Health Organization of the League of Nations came into being, the Permanent Committee of O.I.H.P. acting as its advisory council, thus making for effective co-ordination of the work of these two important and independent international health agencies. What Dr. Biraud described as a "revolutionary initiative" was taken in 1925, when the League Health Organization set up an epidemiological station in Singapore, which received information from 180 ports on the Indian and Western Pacific Oceans. News and advice based on this were broadcast daily to health administrations throughout the area and to ships at sea. After the liberation of Malaya in the recent war the Singapore station was reopened by the British Military Authorities and was transferred to the control of W.H.O. in April, 1947. The broadcasting of epidemiological information has been extended by W.H.O., and, as Dr. Biraud informs us, six transmitters from Geneva send out each day to Europe and the greater part of Africa and America information about the five pestilences of cholera, plague, yellow fever, smallpox, and typhus, as well as about other outbreaks of disease in different parts of the world.

When it came into formal being in 1948 the World Health Organization inherited a health estate of some size, a tradition of disinterested service, and a valuable

experience of success in achievement. The approach to the problems of international health has, as Dr. Martha M. Eliot, the Deputy Director-General of W.H.O., observes in her article elsewhere, undergone a gradual and progressive change. In the early days of international health work the chief concern was to prevent the spread of communicable diseases from one country to another. The next move was to try to control or eradicate such infectious diseases wherever they were prevalent. Finally, medical men and administrators became bold enough to think of taking measures that would encourage and maintain health. The approach became positive. The Health Organization of the League moved over from the debit to the credit side of the health balance-sheet when, in 1934, it decided to study nutrition, housing, and physical culture, its Report on Nutrition being an outstanding monument to its work in this direction. Another movement away from preoccupation with infectious disease is seen in the valuable work done by the League Health Organization on biological standardization. An admirable account of this work and the way in which it has developed is given by Sir Sahib Singh Sokhey in his article on page 1037 of this week's *Journal*. Such work on international standards for biological and pharmaceutical substances leads logically to the work W.H.O. is now undertaking in producing an international pharmacopoeia. The abuse of drugs—of those which lead to addiction—is also another concern of W.H.O. Then, if W.H.O. is to be able to add up the results of its work and to present an account of its stewardship to the world it must have an agreed system of words for describing diseases, injuries, and causes of death; the sixth revision of the International List of these is now completed. The collection and tabulation of data and the planning of field trials for the control of infectious diseases are matters in which the services of the medical statistician are indispensable, and we endorse what Dr. Percy Stocks says about the need for "a strong secretariat for the newly constituted Division of Health Statistics."

What, it may be asked, has W.H.O. done from the time of the establishment of the Interim Commission in 1946? An excellent example of "doing" was shown when it went into action against cholera in Egypt in 1947. W.H.O. headquarters office in New York shipped by air more than 32 tons of vaccine, blood plasma, and other supplies urgently needed for the treatment and prevention of cholera. Through the co-ordinating efforts of W.H.O. United States drug manufacturers supplied about 3 million ml. of cholera vaccine, China provided 2 million ml., and more than 3 million ml. were offered by Indo-China, Japan, and Southern Korea—an inspiring example of international co-operation. W.H.O. has sent experts to China to advise on the control of plague, cholera, kala-azar, and tuberculosis. W.H.O. experts assisted Greece in the training of medical personnel for the control of malaria and tuberculosis. One of the most interesting conceptions of W.H.O. is that of "Health Demonstration Areas." As Dr. Chisholm points out, this conception makes it possible to select several areas where a combined attack can be made on a number of diseases and adverse environmental conditions. One project now being carried out is the eradication of venereal disease from Haiti. Dr. Eliot gives a most interesting account of the work of a demonstration team on malaria in Pakistan. In the spring of last year a W.H.O. international team consisting of a malariologist, a sanitary engineer, and a public health nurse was sent to an area in Eastern Pakistan chosen by that Government. The W.H.O. team was joined by a team from the Pakistan Health Department. Unicef (United Nations International Children's Emergency Fund) supplied equipment and enough D.D.T. to protect a population of 75,000 for a year. At the same time as this control of malaria was in progress the public health nurse in co-operation with her Pakistani colleagues was active in promoting health education and maternal and child welfare. The sanitary engineer advised local departments on plans for water supply and sewage disposal. The Pakistan Government has assigned to the team an agricultural expert, whose task it will be to assess any increase in agricultural production which might be expected to result from improved health of the rural population.

These are but one or two items to illustrate the fact that W.H.O. is doing a good job of work. The wide and beneficent range of its activities is described in this international health number of the *Journal*. When one considers the great difficulties of post-war reorganization and the very meagre budget put at the disposal of W.H.O., it is indeed remarkable how much it has accomplished in so short a space of time. In 1948, 62 nations sent their delegates to the first Health Assembly. Unfortunately the U.S.S.R. withdrew from W.H.O. last year, and those countries under its influence in Eastern Europe have now obediently followed suit. If this generation is saved from the pestilence of war, the pestilence that breeds in men's minds, it will live to be grateful to W.H.O. for saving it from much of the pestilence that breeds in the body. If it is given time and money to see its plans through to completion no nation will be able to afford to remain outside its membership, and we may hope that the U.S.S.R will yet come to see that a global attack on disease and a world-wide health movement constitute a form of international activity that will allay suspicion and bring hope to millions.

INTERNATIONAL STATISTICS

Almost daily in the modern press there will appear comparisons between the loss of infant life in this country and in the Antipodes or between stillbirths in London and New York; there will be comments upon the incidence of whatever disease is epidemic (or fashionable) at the time, be it poliomyelitis or influenza; there will be contrasts between the mortality statistics of the good (or bad, according to the writer's political views) old days and the figures of the present time. Few of the readers—and, it may be feared, equally few of the writers—will pause to think how the basic data of birth, sickness, and deaths are collected, or speculate on the extent to which they are comparable internationally in space and nationally in time. Yet such questions are fundamental. In Spain in 1948 the infant mortality rate was 85 per 1,000; but infants dying before birth registration were not included. In France infants dying before registration are counted as stillborn. In this country the 28th week of gestation must be reached, and in the U.S.A. only the 20th week, before the foetus is regarded as viable and registrable as a stillbirth. And other variations occur. Indeed the path of the medical statistician bent on space and time contrasts is a weary and uphill one. Yet it is by contrasts that he must live, and it is by such contrasts that the scope of preventive medicine must be defined and its action effectively guided. Clearly no obstacle must be placed in the way of improvements in statistics in time—through more complete enumeration, better diagnosis, more informative tabulations, though such changes must inevitably break the sequence of comparable rates. Equally, everything possible must be done to bring about international comparability through agreed definitions and uniform rules of tabulation and presentation.

That much is, in fact, being done in this field is clear from the article in this issue by Dr. Percy Stocks, who is vice-chairman of the W.H.O. Expert Committee on Health Statistics and has himself done as much as anyone in the world to advance the uniform collection and publication of good vital statistics. As he points out, a World Health Organization could not function effectively without the aid of statistics from its member States—"as well try to conduct a global airway system without the aid of telecommunication." One of the main tasks of W.H.O., therefore, must be to study the faults, which too often, indeed, means observing the lack, of vital statistics in many countries of the world; to advise and help such countries to establish or improve their systems; and to lay down international rules that will ensure the greatest possible degree of comparability between their figures. It is for such reasons that W.H.O. has fathered the new *International Statistical Classification of Diseases, Injuries, and Causes of Death*[1] and introduced a standard form of death certificate which throws upon the medical certifier the responsibility of deciding on the underlying cause of death when more than one morbid condition was present. The Expert Committee on Health Statistics has also been studying the problem of the definition of stillbirth and foetal death, and the rates of recovery or survival most appropriate for the purpose of cancer statistics. In both these highly important questions international comparability is earnestly to be desired. It is also a matter of note that the Expert Committee has expressed the view that "when large-scale projects for reducing the incidence of diseases are embarked upon by W.H.O. the advice of statisticians should be sought during the planning stage." The slogan, "Ask the statistician first and save a post mortem" is coming to be accepted in other countries as well as this.

[1] See leading article in *British Medical Journal*, 1948, **2**, 480.

STANDARDIZATION OF DRUGS

Much of the work of the World Health Organization—epidemiology on a world-wide scale, campaigns against diseases like malaria, the improvement of hygiene in backward countries—appeals immediately to the imagination. Its work on therapeutic substances has less appeal and is less widely known, but, as the comprehensive account of it by Sir Sahib Singh Sokhey elsewhere in this issue shows, it is no less important. The first thing about drugs a doctor or his patient must be sure of is their purity and potency. In this country he can be fully assured when they satisfy the requirements of the Food and Drugs Act, the Therapeutic Substances Act, and the *British Pharmacopoeia* or other reputable formularies. In other countries the requirements may be different or non-existent. With the publication this year of the first *International Pharmacopoeia* international medicine and trade in medicines should benefit greatly by the minimum standards of excellence laid down therein for over 200 drugs. This is a small number (the *British Pharmacopoeia*, 1948, itself admittedly eclectic, contains nearly 800 monographs), and even with subsequent addenda it will probably remain comparatively small. This is as it should be; it is better that the *International Pharmacopoeia* should represent solid agreement on a few basic drugs, and thereby be recognized throughout the world, than risk being international in name only through the inclusion of a large number of controversial monographs.

Most common drugs are specified accurately in terms of chemistry and physics, and, with due regard for the vagaries of the human constitution, a given weight can be relied upon to produce a given effect. There are

others, usually of " biological " origin, whose activity can be measured only by a biological test, either because effective preparations cannot be easily purified or because the active principle, like insulin or an antitoxic globulin, is a large molecular substance whose peculiarities chemistry is still powerless to describe. With such therapeutic substances the effective dose and, equally important, the maximum tolerated dose may vary with each preparation. But effective doses also vary with the animal used in the biological test, and, although to-day it is sometimes possible to breed test animals that are remarkably uniform in their response to a drug, standardization of therapeutic substances directly in terms of animal response is far from dependable. The establishment of a biological standard solves this problem, for the drug may then be tested biologically in parallel with the standard on the same batch of test animals and its strength expressed in terms of the standard preparation; any discrepancies due to gross variation of the animals is thereby eliminated, since the variations will affect the standard and the test preparation in the same way. This simple principle depends on the possibility of making a stable preparation of the substance it is desired to standardize; and since the time when Ehrlich made the first generally recognized biological standard for diphtheria antitoxin there has been a steady increase in the number of substances for which stable standards are available.

The first steps are usually taken by research workers, and a single research standard may ultimately achieve world-wide recognition and use, as happened with Ehrlich's unit of diphtheria antitoxin, which became an international unit in 1922. But when different standards for one substance are set up independently the current measures of potency may be ambiguous and even dangerous. The Permanent Commission on Biological Standards of the League of Nations Health Organization did much in the intervals between the two world wars to systematize and obtain international agreement on biological standards, and by 1939 had established over 30 international standards—for antisera, vitamins, hormones, and organic arsenical and cardiac drugs. The antisera were in the custody of the State Serum Institute, Copenhagen, and the remainder kept by the National Institute for Medical Research in London. Three more—penicillin, heparin, and vitamin E—were provisionally added during the last war by restricted international action, and one of the first actions of the Expert Committee on Biological Standardization, set up by W.H.O., was to obtain full international recognition for these provisional standards. The World Health Organization now has responsibility for the standards established under the League of Nations and for the provision of new standards. Some of the existing standards are falling into disuse. Vitamin B_1, vitamin C, and oestrone, for example, are now recognizable chemical substances whose biological activity needs no biological proof, but standards for other substances will be required for many years to come. The newer standards in the making clearly reflect the trends of modern medicine, which demands the better characterization of immunological products, especially those used for active immunization; of diagnostic reagents, like Purified Protein Derivative of the tubercle bacillus and sera for grouping blood or typing enteric and rickettsial infections; of the numerous newer antibiotics sufficiently non-toxic to permit trial in man; and of the hormones of the anterior pituitary, of which A.C.T.H. is at present outstanding.

Fully acceptable international standards can be established only after carefully organized collaborative tests by interested workers throughout the world, with eventual agreement upon units of potency. For this reason the work of the Expert Committee on Biological Standardization usually follows rather than precedes much of the research in therapeutic substances—research that would be greatly facilitated were the standards already in existence. On the other hand, it is impossible to provide standards in advance for the multitude of biological substances proposed for therapy, many of which do not stand up to rigorous research. This dilemma could be largely avoided if discoverers and other research workers were to offer to the World Health Organization preparations of their new biological substances at the same time as publishing the facts about them. Such reference preparations would then be internationally available as provisional standards, and when necessary would by common agreement graduate to the full status of international standards. By this means—which demands a far readier collaboration of scientific workers with W.H.O. than exists at present—the first reference preparation deposited would have priority as a standard of activity, and the difficulties of alternative and discrepant standards would be avoided.

The World Health Organization is concerned with the use and abuse of drugs, as well as their specification. The control of addiction-producing drugs can be achieved only by world-wide co-ordination of the kind that W.H.O. is fitted to secure. In tests of the prophylactic or therapeutic value of drugs the Organization has less scope, though its participation is no less desirable. The extensive use of B.C.G. vaccine in various parts of Europe and Asia since the end of the war has rightly prompted W.H.O. to seek answers to many unsettled questions in this field, where contending opinions, supported often as much by faith as by reason, still obscure the issue. There is little doubt that in some populations the risk of tuberculosis is diminished by inoculation, but it is of the greatest importance to find out whether B.C.G. vaccination can be a substitute for other hygienic reforms.

NATIONAL INSTITUTE FOR MEDICAL RESEARCH

On Friday this week the King opens the new buildings of the National Institute for Medical Research at Mill Hill. As Professor Lovatt Evans reminds us in his interesting article elsewhere in this issue, the Medical Research Council and its National Institute for Research had their origin in the N.H.I. Act of 1911. Soon after it was decided to establish a research institute negotiations were entered into for the purchase of the Mount Vernon Hospital in Hampstead. While these were in progress the governing body of the Lister Institute proposed to the Medical Research Committee that it should be used as the Committee's Institute provided its existing staff could be employed. But the M.R.C. attached great importance to the inclusion of a research hospital in its institute. When Lord Iveagh generously offered to build a hospital on the site adjoining the Lister Institute and the M.R.C. agreed to employ the existing staff, the members of the Lister Institute nevertheless rejected this scheme.[1] These negotiations led to delay in the conversion of the buildings at Hampstead, and when war broke out in August, 1914, Mount Vernon Hospital was taken over by the War Office, and Thomas Lewis there began his study of "soldier's heart." This work was transferred to Colchester in 1917, and Mount Vernon then became a hospital for flying officers, much work being done on the physiological and medical problems raised by the stresses of flying. When the Medical Research Committee was reconstituted in 1920 as the Medical Research Council and Mount Vernon was given its name of the National Institute for Medical Research the idea of incorporating a research hospital within the institute seems to have been completely abandoned. In 1921 the M.R.C. bought a site at Mill Hill for the erection of farm laboratories for the investigation of viruses.

When the Government in 1936 allocated an additional sum of £30,000 a year for research in chemotherapy the M.R.C. was again faced with a need for expansion. It decided to build an institute on its property at Mill Hill which would provide room for the work done at Hampstead and for chemotherapy and for other new developments. Once more the M.R.C. found its work interrupted by war. The main structure of the new building at Mill Hill was completed by the summer of 1940, and it was lent by the M.R.C. to the Admiralty, who used it as a training establishment for the W.R.N.S. The completion of the new building, work on which was begun in 1937, is now fittingly brought to the notice of the nation by its formal opening on Friday this week by His Majesty the King.

[1] For these and other interesting details see Sir Charles Harington's lecture, *Proceedings of the Royal Society*, B, 1949, **136**, 333.

INFANT MORTALITY FROM BIRTH INJURY

A feature of infant mortality in recent years has been the steady rise in the death rate from injuries at birth. This trend has not been confined to England and Wales, for it has been noted in the United States and in New Zealand, where the infant mortality is very low. It has been suggested that the rise may be due to a change in diagnostic standards rather than to an increase in mortality, but the authors of the joint report[2] of the Royal College of Obstetricians and Gynaecologists and the British Paediatric Association consider that the real death rate from injuries at birth is much higher than that disclosed by the Registrar-General's reports. This rise in mortality was particularly unexpected, because it has occurred during a period when maternal welfare services and hospital accommodation have been improved. Russell and Sutherland[3] have recently examined the statistics in detail. Several causes of infant deaths, including convulsions, have declined rapidly, and these authors investigated the possibility that some of these deaths were being attributed to birth injury. They found, however, that the observed rise in mortality could not be accounted for in this way. The death rate from injury at birth varies greatly both in the towns and in the country: in the county boroughs the rate ranged from 1.35 in West Ham to 5.74 in Huddersfield. There appears to be a negative correlation between injury at birth and social and occupational environment: generally, the poorer towns have a lower rate than the more prosperous ones. Similar differences can be demonstrated between groups of London boroughs. The increase in mortality with ascending social scale has been pointed out by the Registrar-General: in 1930–2 the death rate from injury at birth was 2.44 for classes 1 and 2, 2.13 for class 3, and 1.96 for classes 4 and 5. Russell and Sutherland also examined the possibility that changes in the proportion of first births may affect the death rate from injury at birth, but they were unable to find any significant relationship between these variables. The proportion of women delivered in hospitals or maternity homes might also be a factor of importance, but the available data suggest that confinement in hospital does not affect the chances of the infant dying from injury at birth. Whether instrumental delivery has something to do with the increased death rate is a matter for speculation, since no figures are available for analysis, but it is universally accepted that in the prevention of birth injuries skilful obstetrics plays an important part. Only a large-scale inquiry can provide the information needed for a solution of this problem.

[2] *Neo-Natal Mortality and Morbidity*. Report of a joint committee of the Royal College of Obstetricians and Gynaecologists and the British Paediatric Association, 1949, London: H.M.S.O.
[3] *Brit. J. soc. Med.*, 1949, **3**, 85.

INDIGENOUS MALARIA IN GREAT BRITAIN

The return to England of large numbers of troops who have suffered from malaria raises the question whether locally bred anopheles may not become infected and thus give rise to one or more sporadic cases of indigenous malaria. After the first world war there were in fact 481 confirmed indigenous cases of malaria in Great Britain and, as Shute[4] has pointed out, the geographical distribution of these cases agrees very closely with what is believed to have been the distribution of indigenous malaria about 1860. Thus, apart from a few cases in Shropshire, Buckinghamshire, and Northamptonshire, the indigenous cases from 1917 to 1921 were largely in the eastern counties, from Lincolnshire to Kent and along the south coast as far west as Dorset. Kent had the most serious outbreak, with no fewer than 394 cases. This was mainly due to the fact that

[4] *Mon. Bull. Min. Hlth*, 1949, **8**, 2.

large numbers of men from Salonika who had had frequent relapses were sent home to special camps: one such camp was actually situated in the Isle of Sheppey, a part of England where *Anopheles maculipennis* var. *atroparvus* is prevalent.

From 1941 to 1948 there have been only 34 cases of indigenous malaria in England, one case in the Isle of Man, and one in Northern Ireland. Kent has had only six cases, Surrey eight, and Hampshire, Sussex, and Devonshire three each. This happy result is due to the fact that preventive measures during and after the second world war differed considerably from those taken after the first war. From 1941, whenever a case of indigenous malaria was notified, the home of the patient was visited and a mosquito survey undertaken. The rooms of the house, including the staircase, were sprayed with D.D.T., and if nearby animal houses were harbouring numbers of adult *A. maculipennis* they too were sprayed. These measures, combined sometimes with the administration to patients of proguanil (which is known to be gametocyticidal) for lengthy periods, have apparently been successful in preventing the spread of malaria in England. It is, however, a serious matter that from the data collected after the two world wars it appears that in 26 of the counties of England and Wales conditions are favourable not only for the breeding of anopheline mosquitoes but for the complete development of the benign tertian malaria parasite. Other countries have not been so fortunate in reducing malaria, and in Northern Germany, particularly in Hamburg, there have been some hundreds of indigenous cases. Owing to the large number of infected prisoners returned from Southern Russia and to the widespread breeding of *A. maculipennis*, conditions have been favourable for the spread of the infection. Curiously enough, however, the old-established endemic focus at Emden has not increased in extent.

PULMONARY DISEASE IN SAMOA

In 1948 the Medical Research Council of New Zealand sent a small expedition to Western Samoa, an island territory administered under U.N.O. trusteeship, to study health problems, including the incidence of tuberculosis. The Samoans appear to be comparatively resistant to the tubercle bacillus, and pulmonary tuberculosis, when it does occur, is remarkably chronic: patients live for many years even with extensive disease.[1] While investigating *x*-ray films of the chests of apparently normal persons Thompson[2] noted the frequent appearance of certain abnormalities—interstitial fibrosis with pleural thickening, distortion of mediastinal structures, and compensatory emphysema in the later stages. Clinically the condition may be without symptoms or it may simulate pulmonary tuberculosis, for which it is often mistaken. The cause of these changes in the lungs is obscure, but the chronic fibrosis may be due to the passage through the lungs of the larvae of intestinal parasites, the process being repeated over a long period. Whether such successive episodes are accompanied by acute pneumonitis of the type sometimes described as Loeffler's syndrome or tropical eosinophilia can be determined only by further studies, though case histories indicate that such is probably the case. It is possible that Bancroftian filariasis may play a part in causing these lung lesions.

[1] Thompson, B., *Tubercle*, 1950, **31**, 26.
[2] *J. trop. Med.*, 1950, **53**, 1.

SHORTAGE OF DOCTORS IN SWEDEN

The organ of the Swedish Medical Association, *Svenska Läkartidningen*, has of late contained many articles about the proposed transfer of some 200 Austrian doctors to Sweden, where there are many junior hospital appointments vacant. Last December the Swedish Government decided to send a delegation of three, including Professor Lichtenstein, to Austria to study the possibilities of the proposed transfer. This tour of inspection lasted from January 10–23, 1950, and the delegates' report to the Swedish Government has now been published.[1] It appears from this report that, while the two countries have approximately the same population, Austria has about 12,000 doctors and Sweden has only about 4,500. But Austria has at present no surplus of highly qualified doctors. In 1937 Vienna had 65 professors and "Docents" in internal medicine alone. By 1939 this figure was reduced to 19, and in 1945 it was down to five. However, there does seem to be a surplus of young, recently qualified doctors. The delegation's report has now been commented on by various scientific bodies, such as faculties of medicine in Sweden, and there is no great enthusiasm over it. It is pointed out that about 350 foreign doctors and medical students are already at work in Sweden, and if some 200 Austrian doctors are to be brought into the country more than 10% of the medical profession in Sweden will be foreigners. It is feared that Austrian doctors would experience great difficulty in mastering a new language, and ignorance of Swedish would be a serious bar to efficiency, particularly in asylums. It is also suggested that the Austrian doctor willing to leave his own country would not represent the cream of the profession. There is also the possibility that the shortage of doctors in Sweden is more apparent than real, that whatever shortage exists may be corrected in a year or two by a new generation of Swedish doctors, and that the lack of candidates for junior hospital, sanatorium, and asylum appointments merely reflects the poverty of their emoluments. Given adequate remuneration, and houses for the successful applicants, these vacancies could perhaps soon be filled. Behind this discussion of the importation of doctors is the wider issue of complete State control of all medical practice in Sweden, and the Swedish Medical Association, in defending the best interests of the medical profession, has to meet problems already familiar in other countries.

Dr. A. E. Clark-Kennedy will deliver the Croonian Lectures before the Royal College of Physicians of London (Pall Mall East, S.W.) on Tuesday and Thursday, May 9 and 11, at 5 p.m. His subject is "The Patient and his Disease."

[1] *Svenska Läkartidningen*, 1950, Nos. 9, 10, 11; 12, 13, and 14.

THE NEW NATIONAL INSTITUTE FOR MEDICAL RESEARCH AT MILL HILL

BY

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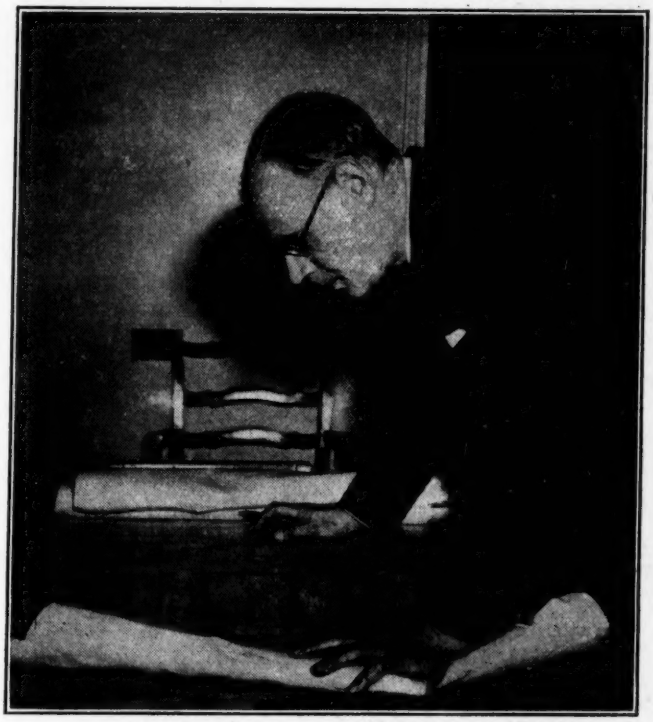
The inauguration by His Majesty the King on May 5 of the National Institute for Medical Research at Mill Hill will be a landmark in the history of medical science in Great Britain. The Institute, representing as it does the crowning fulfilment of the recently retired secretary of the Medical Research Council, Sir Edward Mellanby, and of the first director of the precedent Institute, may be expected to continue and extend the splendid record of that Institute, which was created by the vision of the original Medical Research Committee and of its first secretary, the late Sir Walter Fletcher, and became world-famous under the leadership of its first director, Sir Henry Dale.

The building of the new Institute, designed by Mr. Maxwell Ayrton, F.R.I.B.A., was begun in 1937, but was interrupted by the outbreak of the recent war. The completion of the structure, which was occupied by the Admiralty and used for training by the W.R.N.S. from 1942 to 1946, the establishment of its laboratories, and the transference of equipment from Hampstead have been carried out under the supervision of the present director, Sir Charles Harington. The estimated approximate capital cost of the new buildings, excluding the scientific equipment of laboratories, was £820,000.

The premises of the former Institute at Hampstead will in future be known as "The Medical Research Council Laboratories, Hampstead," and will house various units of the Medical Research Council which cannot be placed in the new Institute. These will include the Tuberculosis Research Unit, the Human Nutrition Research Unit, the Laboratory Animals Bureau, the laboratory section of the Department for Research in Industrial Medicine (the clinical section remaining at the London Hospital), and eventually part of the Environmental Hygiene Research Unit.

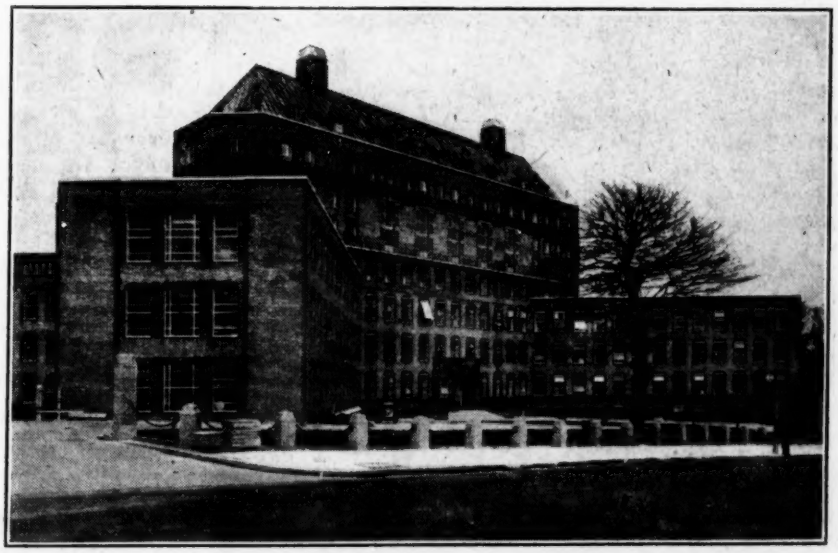
History of the Medical Research Council

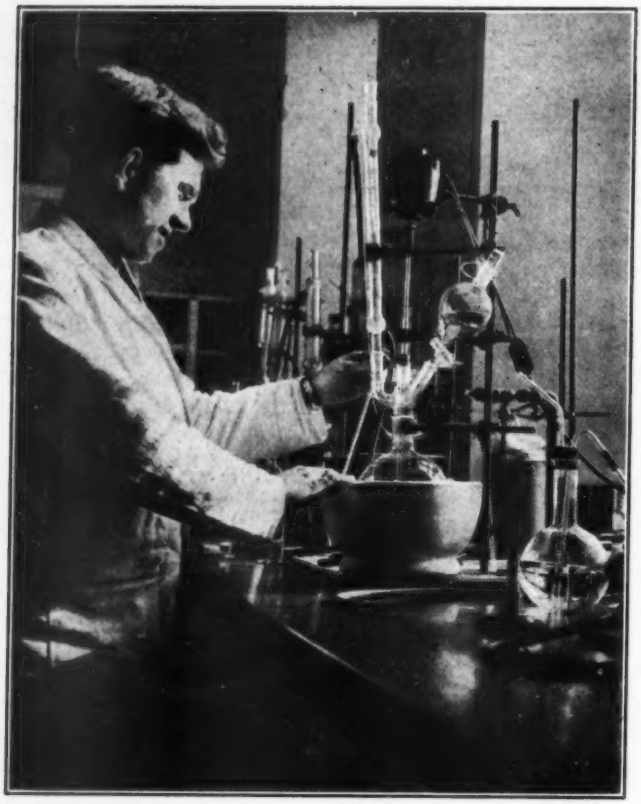
Since the policy of the Medical Research Council has done much to shape the course of medical research in this country, it may be well briefly to recall its history during the thirty-seven years of its life, in which it has set a fine example, perhaps the finest in the whole world, of the way in which a State can sponsor scientific research. The rapidly increasing complexity of scientific research, with its attendant high cost, has during the past few decades made it inevitable that much of the cost of the work must be put to the public expense, and it is obvious that a modern State has heavy obligations to discharge in various directions bearing on medical research. None of these obligations can be more weighty than those concerned, in the first place, with the training of medical research workers, and, in the second place, with the provision of the wherewithal for their endeavours. The first is a primary function of the university departments, though the Medical Research Council has of late years, by the provision of grants for training in research, taken its share of responsibility. The second, the main function of the Council, is discharged in a variety of ways.



Sir Charles Harington, Director of the Institute.

An exterior view of the new building.





An experiment in organic chemistry.

One of the electron microscopes ; this instrument gives magnification up to 60,000 diameters.

The need for such State support for medical research was already evident when the National Insurance Act of 1911 was passed. Accordingly the sum of one penny per insured person per annum was set aside for this purpose, and it was to administer the sum of £55,000,* which represented the income arising out of the first year's operation of the Act, that the original Medical Research Committee was set up. The Committee decided that medical research could be encouraged in four ways: (1) by the establishment of centralized laboratories staffed by whole-time workers ; (2) by the appointment of full- and part-time workers in university or other laboratories or in hospitals ; (3) by the provision of grants to workers in academic institutions engaged in independent researches ; and (4) by the establishment of a statistical department. Out of the first way grew the National Institute for Medical Research, and out of the second grew the various M.R.C. units ; the third represented, as it still does, the main item of expenditure in the budget ; the fourth illustrates the Committee's awareness of the growing importance of statistical methods in all biological investigations.

The first secretary of the Committee in 1915 signed the Committee's first Report, and this made it clear that researches to be encouraged were such as had " bearing on health and disease, whether or not such researches have any direct or immediate bearing on any particular disease or class of diseases, provided that they are judged to be useful in promoting the attainment of the above object." This wise direction expressed the view of the Committee that more was often to be achieved, not only at the beginning, but also in the end, by encouraging the pursuit of knowledge in any related fields of inquiry than by the planning of *ad hoc* researches by the Committee as a series of frontal attacks on particular diseases. Although in some instances such frontal attacks might be indicated, and have indeed been carried out, in general the expression " the prosecution of research " correctly states the attitude of research workers, who follow up a clue wherever it may lead, the only objective being the " improvement of natural knowledge " : it is in contrast to the by no means unimportant process of " development " in which natural knowledge acquired by research is brought out or exploited for a particular end, not necessarily a laudable one.

It is difficult to get laymen to believe that planning, which can sometimes be employed with such spectacular results in the latter process, is largely thrown away on the former. In striking at the outset for the academic freedom of all its workers, therefore, the Medical Research Committee of 1915 laid the very foundation for the success of all its future undertakings. Things might have been far otherwise ; the Committee and all its workers might, for instance, have been drawn into the ambit of a Ministry, and have been so " cabin'd, cribb'd, confin'd, bound in to saucy doubts and fears " as to have been frustrated and to have lost that freedom from the start. Instead, when the Committee was, in 1920, reconstituted by Royal Charter as the Medical Research Council, that body was placed under the Committee of the Privy Council for Medical Research, with the Lord President of the Council as chairman.

As a consequence of this wise line of action the work of the Medical Research Council is free from political influence, and is also carried out at a surprisingly low

*The Parliamentary provision for the Medical Research Council in 1949–50, less surrenders, was £1,216,000 ordinary expenditure and £319,000 capital expenditure.

administrative cost.* As a further consequence, it came about that by the time the Hampstead laboratories were ready for occupation by the small band of workers then employed by the Council, which was in 1920, this band took over in an atmosphere of academic freedom comparable with that prevailing in university departments.

The Original Institute

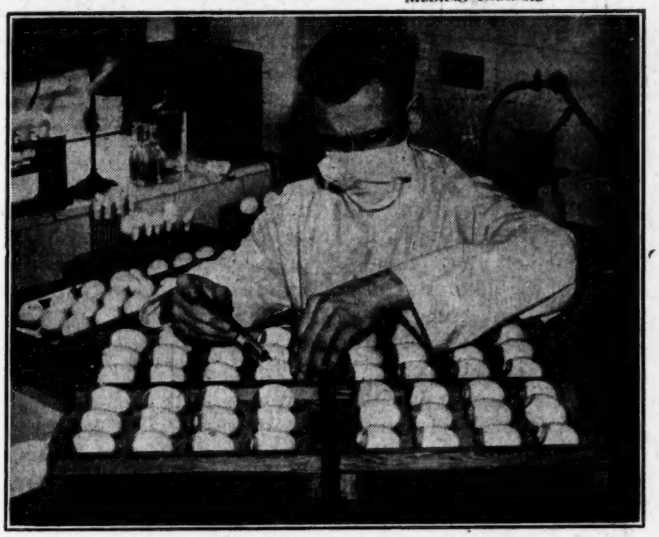
Those laboratories, which became known as the National Institute for Medical Research, had originally been built as a hospital, the Mount Vernon Hospital, Hampstead, and the property was purchased freehold in 1914 for the sum of £35,000. The outbreak of war in 1914 prevented the premises being developed as research laboratories in the manner planned by the Committee; they were taken over by the War Office and used at first, under the auspices of the Medical Research Committee, for the study of "soldier's heart" by Sir Thomas Lewis; after 1917 the hospital was used by the Canadian Forces for a time, and afterwards as a Central Hospital for Flying Officers: during that time much work on flying stress was carried out there, also under the Medical Research Committee.

The original Institute contained four "departments," one of physiology, pharmacology, and biochemistry under H. H. Dale, one of bacteriology and immunology under S. R. Douglas, one of applied physiology under Leonard Hill, and the statistical department under John Brownlee. The "library" consisted of a few books which could have been transported in a hand-barrow: it is now one of the finest of its kind in the country.

At the beginning the entire staff of the Institute was regarded as directly responsible to the Council, through its secretary. This dangerous start was put right by the appointment of H. H. Dale as director of the whole Institute in 1928, with the result that much better co-ordination was obtained in the running of the Institute. It is this easy and flexible co-ordination which has done so much to enhance the potentialities of the whole Institute. Modern scientific work almost always demands specialization of a very high order, and because most real research deals with the unexplored fringes of knowledge it not infrequently happens that some of the most promising fields are those where two or more disciplines overlap.

It has been a common practice in the universities, as a matter of administrative expedience and as a means of procuring financial support, to create departments in such special subjects. This serves well for the production of specialists, but it has the tendency for those specialists to lose contact with other profitable lines of inquiry and, as it has often been expressed, to "know more and more about less and less." Departmentalism can be prevented only by having research workers mingle freely with one another and work in one another's laboratories: fresh interests then soon spring up, new lines of approach suggest themselves, and research teams come into being on the basis of voluntary co-operation. It is this spirit which prevails at the National Institute for Medical Research, and which grew up under the leadership of Sir Henry Dale. It is true that the research staff of the Institute is grouped into Divisions and Sections, each under the leadership of a senior investigator, but the staff are as little walled-in as are their own interests and investigations.

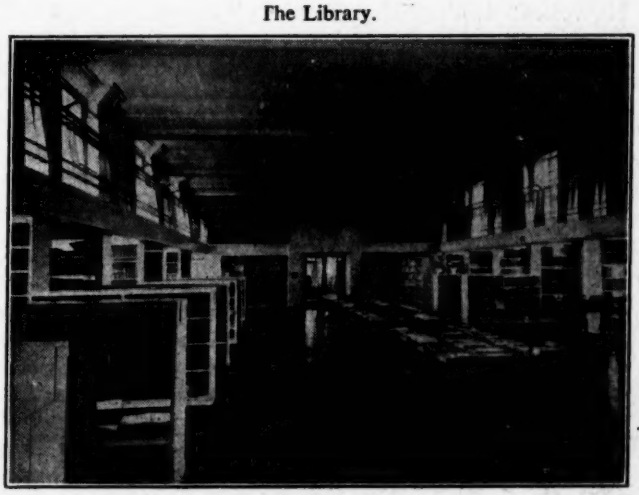
It had been the original intention of the Medical Research Committee to have a small research hospital in close association with its central laboratories, but by the time the Institute at Hampstead came into use this plan was abandoned for various reasons, and contacts with clinical material were made by the establishment of separate research units, such as the one originally led by Sir Thomas Lewis at University College Hospital, or the more recently established Harvard Unit for the study of the common cold at Salisbury, the latter being a good illustration of the flexibility of the Council's outlook in virtue of which it is able, when the signs are propitious, to make facilities for a frontal attack on a particular disease. The circumstances which made it seem likely that the time might be opportune for this frontal attack on the common cold were that much laboratory-based knowledge of the viruses had accumulated in recent years; a good amount of that knowledge—for example, the discovery of the influenza virus by Andrewes, Laidlaw, and Wilson Smith—had originated from the investigations which had been carried out at the National Institute for Medical Research, so that experts on the viruses were already working on the spot and could organize the investigation at the clinical level.



Inoculation of eggs with influenza virus.

It was, in a way, out of the requirements of virus research that the idea of the new Institute was conceived, for in 1921 the Council purchased the Mill Hill site for the original purpose of erecting thereon animal farm buildings and laboratories in which virus research work could be carried out. The first work to be undertaken there was a frontal attack on the distemper of dogs and

The Library.



*In 1949–50 this was only £54,653 for a total grant-in-aid (net) of £1,535,000, which excludes certain incomes, such as that from benefactions.

other species. This work, carried out by Laidlaw and Dunkin and financed by the *Field*, led to the discovery of the cause, and to a method for prevention, of dog distemper. Now another strong line of research at the National Institute was the study of chemotherapy, and its workers had already made to this department of knowledge such important contributions as the development of the amidine drugs for the treatment of kala-azar. The Council set up a Chemotherapy Committee in 1928 to further the interests of research in this subject, and in 1936 the Government allocated an additional £30,000 per annum to the Council for financing the further development of the subject.

At the existing Institute, however, there was no possibility of further expansion, so it was decided to design for erection at the Mill Hill site an entirely new National Institute for Medical Research where better accommodation could be provided not only for the studies already in hand but also for the development of the researches in chemotherapy. A nutrition building for the study of general nutritional problems had already been erected on the site, and was in part paid for out of the Fletcher Memorial Fund. It is now some thirteen years since the building of the new Institute was begun, and, if it was true in 1937 that the Hampstead Institute was congested, by the time the new building was ready for occupation every available square foot of space at Hampstead, even to the corridors, was crammed to bursting point.

The New Institute

The new building, of noble and dignified design, has a total area of about 90,000 sq. ft. of working space, excluding the Fletcher Memorial Hall and stores. It consists of a central block with two obliquely placed wings at each end, so that all the rooms are well lighted. The central block is seven stories high, and the wings three stories above ground at the front of the building; there are basement and sub-basement floors which, owing to the slope of the ground, are at some aspects well lighted. There is accommodation for some 400 workers in all. The present staff consists of about 85 qualified research workers, about 160 technicians, and maintenance and administrative staffs. In addition to the whole-time established workers on the scientific staff, there are unestablished and temporary workers, and visitors from other parts of the country and from abroad. The estimated running cost for 1950–1, including salaries but excluding the costs of the Nutrition Building, is £278,000, as compared with £204,754 for the 1949–50 costs of the Hampstead Institute and Farm Laboratories at Mill Hill.

The range of work which will be undertaken in the new Institute is of the most varied description, and could cover all the laboratory aspects of medical research. This can be seen from the following brief account of the laboratories.

The general arrangement is that engineering services, stores, and certain laboratories are placed on the lower ground floor; administration and fine-instrument shops on the ground floor; laboratories and animal house on the ground, first, second, and third floors; library on the fourth and mezzanine floors; canteen on the fifth floor; and club-rooms for the technical staff on the sixth floor. The laboratories are very well provided with services, which include pressure water, steam, compressed air, and direct electrical current of various voltages. Each floor has hot and cold rooms, and some of the latter are fitted for laboratory work at low temperatures. Large general stores occupy the basement of the Fletcher Memorial Hall, and are accessible on the one hand from a service road, and internally at a central point convenient for distribution throughout the Institute.

The Divisions

For convenience of administration the Institute is subdivided into divisions, each under the direction of a senior scientist.

Division of Chemotherapy.—This, at present the chief concern of the Institute, has the largest allocation of space. It has become clear that in the undertaking of research in this subject much effort is wasted if there is not the closest possible contact between organic chemists and biochemists on the one hand and biological workers on the other hand. Accordingly the Division is provided with associated laboratories for organic chemistry, microanalysis, hydrogenations, and large-scale chemical work, and with fully equipped biological testing laboratories. An insectarium, which cannot be housed in the main building, is being constructed in a special building outside. This Division occupies the lower ground, ground, and first floors of the south-east wing.

Division of Virus Research.—This Division is placed on the second floor of the centre block, and its work also includes that of the World Influenza Centre, which identifies the strains of influenza virus collected from epidemics in various parts of the world. Near by are large rooms for the preparation and sterilizing of media, and a section for general histological work for the general service of the Institute.

Division of Biological Standards.—This Division is one of which the Institute may justly feel very proud. As a continuation of its work in connexion with the Health Organization of the League of Nations, the Institute has a large share in the responsibility of the World Health Organization for the maintenance of International Biological Standards, and the actual International Standard substances are stored in a cold room in this Division, which occupies part of the second floor of the north-east wing. As the work involved is very varied, much of the work of this Division is shared out among the various specialists working in other Divisions in the Institute.

Division of Experimental Biology.—This Division is an illustration of the flexibility of the organization within the Institute: it was formerly engaged almost wholly on problems of endocrinology, but, its interests having widened considerably, the title has been appropriately altered: the head of this Division is also responsible for the Experimental Animal Houses, and for the Small Animal Breeding Colony and Poultry Department housed in outlying buildings.

Division of Bacterial Chemistry.—This Division is another instance of the adaptability of the organization. Formerly an external unit under the direction of Sir Paul Fildes, it has now been assimilated as a Division working in close contact with the Divisions of Chemotherapy and Biochemistry.

Division of Physiology and Pharmacology.—This occupies the lower ground floor and basement of the north-east wing, and has developed from the laboratory (F4) at Hampstead, which, under Sir Henry Dale, contributed so much to the reputation of the Institute. The laboratory is well equipped for physiological and electrophysiological work, and works in close collaboration with the Divisions of Chemotherapy and Biochemistry.

Division of Biochemistry.—This was formerly part of the Department of Physiology and Pharmacology, and is

now raised to the status of a Division. It occupies part of the ground and first floors of the north-east wing, and will of necessity have very close links with most of the Divisions in the Institute.

Division of Biophysics and Optics, including a Section of Physical Chemistry.—This is housed on the whole of the ground floor of the south-west wing, part of that of the north-west wing, and part of the first floor of the south-east wing. Part of the territory is fully air-conditioned. This Division is one of great value and importance to the work of the Institute as a whole, as physical techniques are finding great and increasing scope in modern biological work. One of its important activities is in connexion with the employment of isotopic elements in biological work of many different kinds. This Division has the primary responsibility for work on the radioactive isotopes used in the other laboratories, and also possesses a mass spectrometer (made in the Institute) for the estimation of stable isotopes. There are two electron microscopes, which are of the greatest value in virus research, a Tiselius electrophoresis apparatus, and much other valuable physical apparatus. The optical part of the Division has unique equipment for the employment of modern methods of microscopy, such as phase-contrast and ultra-violet microscopy.

Other Sections

Fine-instrument Shop and Electronics.—Modern laboratory work, particularly in biophysics, necessitates well-equipped fine-instrument workshops and shops for the construction of electronic apparatus, and accordingly there is an adequately equipped fine-instrument workshop attached to the Biophysics Division.

Animal House.—This essential part of the Institute occupies the first and second floors of the north-west and south-west wings, and provision is made for the accommodation of all the species in common use in the laboratories. It has forced ventilation throughout, and the cages and racks are of the most modern design, with special arrangements for sterilization, for the clean and rapid distribution of food, and for cleaning and disposal of refuse. Dangerous infections can be dealt with in isolation units, the effluent air from which is disinfected before discharge. A very important feature is the close proximity of the animal houses to the laboratories.

Library.—This occupies the fourth and mezzanine floors of the central block, and consists of the large reading-room, ample stack-rooms, and a set of small rooms for the use of members of the staff engaged in library studies. This obviates the necessity for the provision of a rather large number of private rooms for research workers, whose time is preferably spent almost wholly in the laboratories and library and in personal contact with other workers.

Canteen and Club-rooms.—The canteen, on the fifth floor, is worked on the cafeteria system, and seats 240. Coffee-rooms are provided for the various sections of the staff, and one of these can be divided, if required, for use as a private dining-room for the entertainment of special visitors.

Part of the space on the attic floor is used for indoor recreation for the assistant staff.

Entrance Hall, Conference Room, Fletcher Memorial Hall, and Administration.—These occupy the ground floor of the centre block. The entrance hall is divided into two parts, of which the inner one is a foyer leading to the Fletcher Memorial Hall, which commemorates the first secretary of the Council. It seats 230, and its furnishings and equipment have been provided in part from the Fletcher Memorial Fund. It will be used for meetings of scientific societies visiting the Institute, and will be very welcome, as the Hampstead Institute had no worthy accommodation for that purpose, and meetings held there, because they always attracted a large attendance, were almost unbearably congested and uncomfortable. The Fletcher Memorial Hall has provision for cinema projection of 16-mm. and 35-mm. films, and will also be available for social functions.

The new Institute will start its life with a vitality far more abounding than any mere catalogue of laboratories could possibly suggest. It has grown up in the way that the best research institutions always do grow up—namely, as the result of fine tradition and of irresistible pressure of growth from within. The alternative method, that of building an Institute and then trying to attract workers to fill the vacuum, would be a likely road to failure. It is, after all, the people working in a place who make its reputation, and not the amount or quality of its fittings. There is no need to echo the fatuous remark that, since some of the best work has been done under uncomfortable physical conditions, better conditions for the prosecution of scientific work are a needless luxury. The surroundings and equipment of workers at the National Institute for Medical Research have always been as good as the Council could provide, and these have already yielded splendid dividends of which the nation can be proud. With the present improved, but by no means extravagant, environment, and above all with the distinguished staff with which it opens, the Medical Research Council, and its new secretary, Dr. H. P. Himsworth, can confidently anticipate for the new Institute a record of achievement as distinguished as that of its predecessor.

The illustrations are by Westwood and Johnson, Keystone Press Agency, and Central Press Photos.

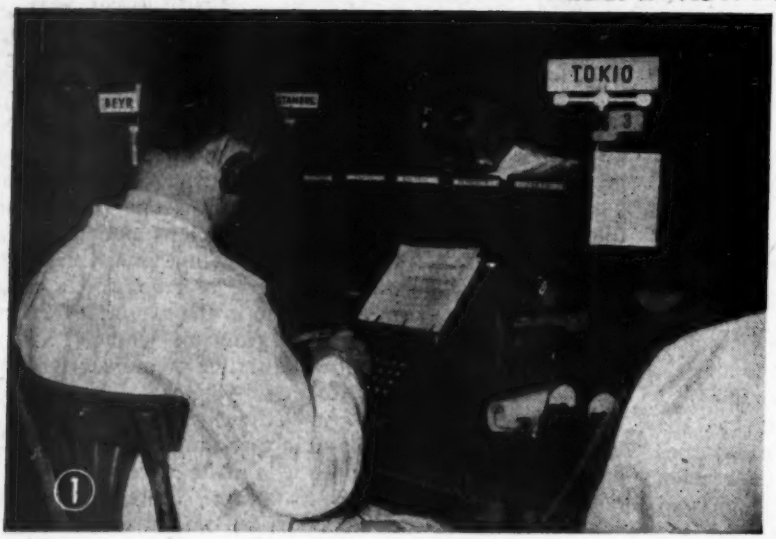
THIRTY YEARS AGO

An extract from a leading article in the "British Medical Journal" of September 11, 1920, page 405:

Health and the League of Nations

"The council of the League of Nations during its meeting last month at San Sebastian gave attention to the problem of international health, and adopted the scheme drawn up by the International Health Conference held in London last April. That conference was convened by Dr. Addison, at the request of the council of the League of Nations. The constitution then drafted for an international health office under the League provided for the establishment of a general committee and of a permanent committee for executive purposes. This permanent committee would consist of members delegated by the council of the League of Nations, of the president and four members of the General Committee, of a representative of the League of Red Cross Societies, and of a representative of the International Labour Office set up under the League of Nations. The permanent committee would apply itself to drawing up new conventions or revising those that exist.

"The functions of the health organization which it is thus proposed shall be set up under the League of Nations are: (1) to advise the League on matters relating to health; (2) to co-ordinate the work of national health administration; (3) to organize rapid interchange of information on epidemic diseases and rapid action where such information affects several countries; (4) to initiate or revise international agreements for administrative action in health matters when so requested; (5) to co-operate with the International Labour Office for the protection of workers against industrial diseases and injuries; (6) to co-operate with the League of Red Cross Societies in measures against world-wide epidemics; (7) to give advice on large questions of hygiene to other authorized voluntary organizations; and (8) to organize health commissions when requested."



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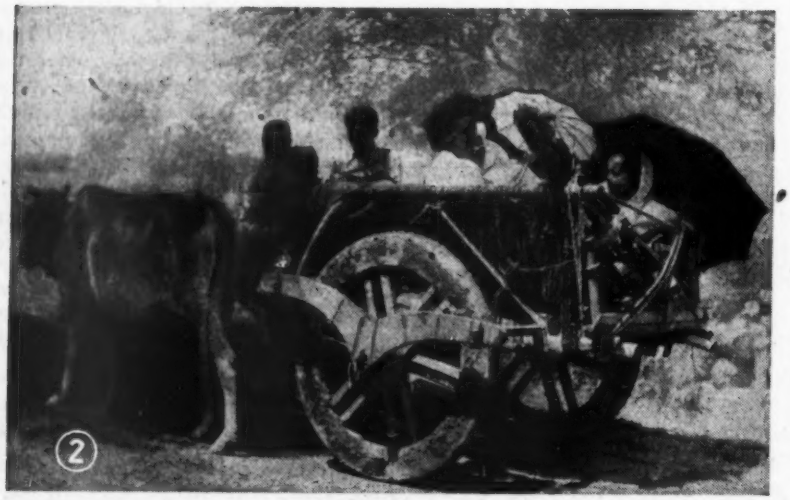
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W.H.O. IN ACTION

The World Health Organization undertakes the daily transmission in English and in French of world-wide broadcasts of information about epidemic diseases. These bulletins, which are sent out from Geneva are for the guidance of health authorities, ships at sea, and port and airport health officers. In that corner of the broadcasting studios shown here (Fig. 1) reports are received from and transmitted to Tokyo, Beirut, Bangkok, Shanghai, Istanbul, and other centres.

While at the Geneva centre of the World Health Organization and in many of its regional activities all the most modern devices of communications and transport are in use, in some parts of the world W.H.O. teams have to work under conditions in which even the means of transportation provide special problems. It is not uncommon for the most primitive bullock-carts to be used (Fig. 2), for example, in going out to inspect the progress of D.D.T. spraying in remote parts of India.

So far as possible the activities of W.H.O. have been decentralized and are carried out by linked organizations operating through regional offices. Thus in October, 1949, Pandit Jawaharlal Nehru inaugurated the meeting of the Regional Committee for South-East Asia held in New Delhi (Fig. 3). In this picture Rajkumari Amrit Kaur, the Health Minister, is seated on the right of the Prime Minister and on his left is Dr. Brock Chisholm, Director-General of W.H.O.

3

One of the most serious problems to be faced in India, as indeed in other countries, is that of the prevalence of malaria. It is not uncommon in the villages in malarious areas to see men and women with enormously enlarged spleens. A case of this kind is shown (Fig. 4) being examined by the head of a W.H.O. demonstration team in India.

Another aspect of antimalarial work is that shown in Fig. 5. Sampling methods for D.D.T. analysis are being demonstrated to Turkish malariologists. This type of work in the laboratories is closely integrated with field surveys.

It is estimated that throughout the world each year more than 3,000,000 people die of malaria and that there are more than 300,000,000 new infections. W.H.O. experts and demonstration teams are now at work on all aspects of the prevention and treatment of malaria in Italy, Greece, Persia, India, Afghanistan, Thailand, and Pakistan. Malaria is not only a serious and difficult medical problem but it is also a major obstacle in the way of adequate food production because of its effects on agricultural workers.

Two other diseases of world-wide importance and therefore of especial interest to the World Health Organization are syphilis and tuberculosis. Penicillin has made practicable the almost complete eradication of prenatal and infantile syphilis, but the antibiotic itself and knowledge of its application are lacking in many countries. W.H.O. is engaged in an effort to supply both drugs and knowledge, and its activities in this direction are concentrated on those countries in which there is still a high incidence of congenital syphilis.

As part of the present W.H.O. programme 100,000,000 children and young adults will be examined in the course of a world-wide tuberculosis survey. A large number of teams are taking part in this project in Greece (Fig. 6) and in many other countries. It is anticipated that more than 35,000,000 will be given the protection offered by B.C.G. vaccination through the good offices of the so-called Joint Enterprise. This is the organization set up by the United Nations International Children's Emergency Fund and the Scandinavian Red Cross Societies. W.H.O. is giving technical assistance and active support.

Much of the work of W.H.O. is carried out in regions where environmental sanitation is a serious problem. This is particularly the case, for example, in the camps of the Middle East in which nearly half a million Arab refugees are living. Unhygienic conditions present a constant threat of disease and particularly of typhus, of which 850 new cases were recently reported in one small area alone.

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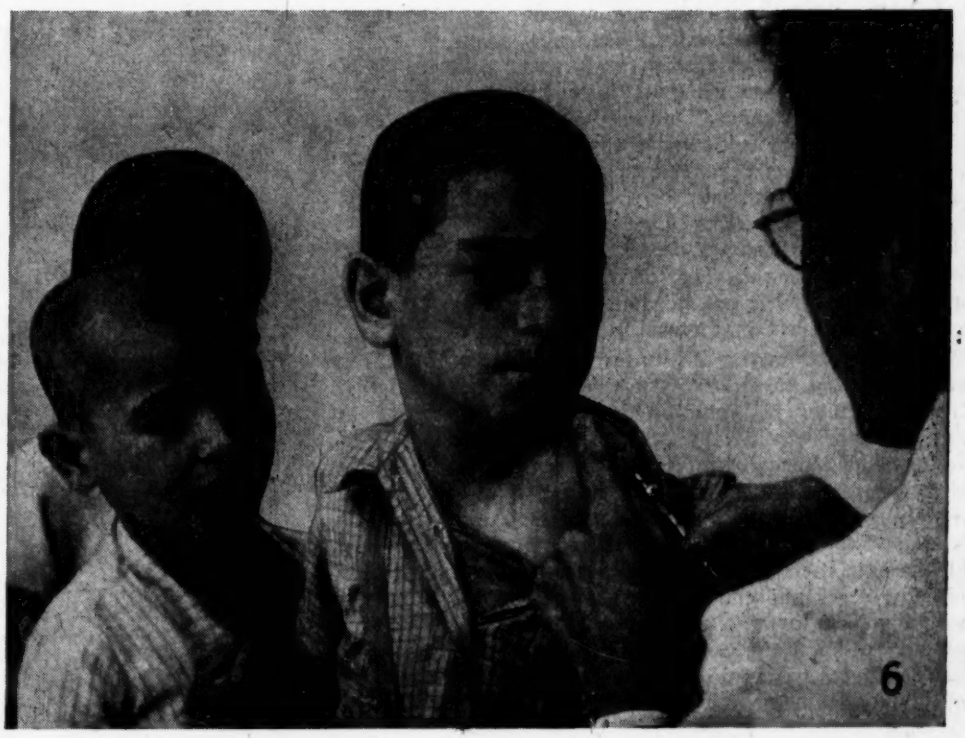
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All the photographs reproduced on these pages and in the opening articles are official United Nations Photos obtained from the W.H.O. Department of Public Information. The two maps on pages 1024 and 1048 are by Miss G. McKerrow.

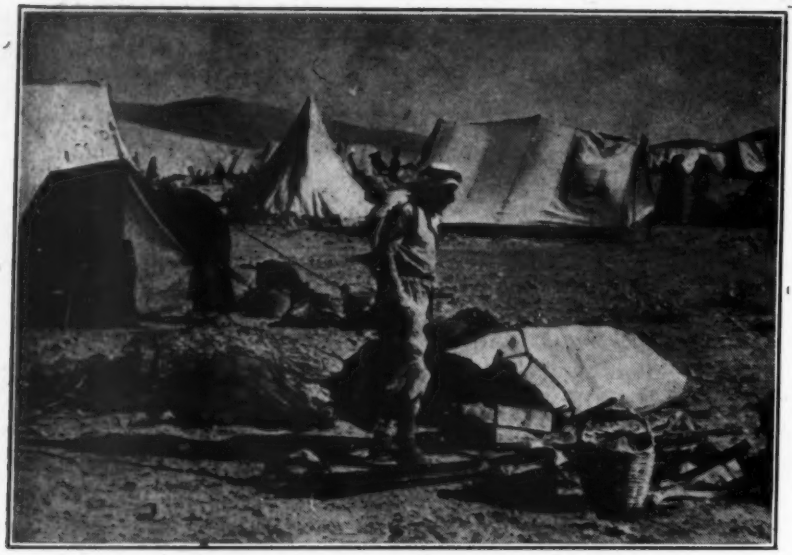


FIG. 1.—A new arrival in the camp prepares to set up his tent.

ARAB REFUGEES: MEDICAL RELIEF WORK IN JORDAN

BY

L. J. BUSSELL, D.M., M.R.C.P.

At the time of writing (March, 1950) more than 300,000 Arab refugees from Palestine are dispersed through Syria, Lebanon, and Transjordan. The following remarks apply in particular to Transjordan, or, more currently, the Hashemite Kingdom of Jordan, which contains some 90,000 refugees. Here the medical service for refugees has been entrusted to the British Red Cross Society, working in conjunction with the League of the National Red Cross Societies.

A few of the refugees were professional men, business men, or wealthy landowners in Palestine, and some of these have found work in their new surroundings, often with the Red Cross. Many more were poor peasants, and most of these now find themselves workless and often penniless, with only the U.N. monthly food ration between them and starvation. Some are living in huge tented camps run by the Red Cross (Figs. 1 and 2), one such camp in the Jordan valley containing more than 15,000 persons. A larger number have been able to rent a room in the mud-brick villages, a family of twelve often sharing a single room. Others have rented caves, while the less fortunate exist in wretched patched-up tents on the outskirts of the villages. The Bedouin have perhaps suffered least, having simply moved their goat-hair tents across the border; but even they have lost land, grazing rights, or cattle.

So far, measures for the welfare of refugees have been confined to the immediate necessities of relief. The Red Cross distributes the monthly U.N. food ration, generous in flour but otherwise meagre, a limited amount of clothing, and provides a medical service. Supplementary food centres where hot meals are served have been set up at some points, as well as milk centres for infants, children, and maternity cases. The feeding and medical services have proved adequate to meet the emergency. Gross malnutrition is not now seen, and the standard of health of refugees is probably not lower than that of the local population. Supplies of clothing, however, fell short of demand, and many refugees went cold in winter. The winter of 1949–50 will long be remembered for the heavy fall of snow, which was not as usual confined to the uplands but embraced even the shores of the Dead Sea itself.

Medical Service Provided

In Jordan two 50-bed hospitals—one at Irbed and one at El Salt—and two mobile medical units were set up. In addition, doctors and nurses were provided for the tented camps, and antimalarial work was carried out by a squad of D.D.T. sprayers, who worked under the supervision of a malariologist. In the camps schools are run by refugee teachers. The largest camp enjoys a mosque and a market, and generally shows signs of becoming a permanent settlement.

Each mobile unit comprises one ambulance, a doctor, two nurses, and an assortment of medical boxes. These units tour their districts, setting up clinics in the villages and generally visiting one or two villages in a day. Conditions of work are severe. Most of the roads of the country are rough stony tracks, suitable only for camels or horses. The motorist is half choked by dust in summer. In winter he must run the gauntlet of mud, and must be prepared for monstrous bumps at all times. On arrival in the village a mud-brick room is hastily converted into a clinic, and 300 patients may be seen in the next four hours. An attendance of 150 is common. Unfortunately, a number of patients attend to "take a look" or from natural reluctance to be absent from any free distribution—an aspect of relief work that has to be carefully watched. The mobile unit teams may be entertained to lunch by the village headman or by Bedouin tribesmen in their tents. In spite of the heavy work, the mobile units provide the best means of seeing the country and getting to know the people, and in consequence are popular with nursing personnel.

The Diseases Treated

The diseases seen are those general throughout the Middle East. In the present heyday of therapeutics it must always be remembered that the final remedy lies not in the application of specifics but in public-health measures and raising the general standard of living. Indeed, there is a

FIG. 2.—Refugee camp in the Jordan Valley.

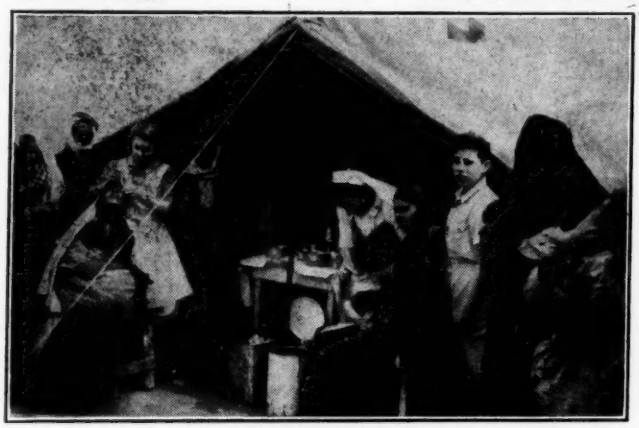


FIG. 3.—The camp eye clinic.

danger that the unthinking application of specifics may actually hamper progress. Thus, infested clothing is now dusted with D.D.T. as an alternative to regular washing. Research workers continue to seek the ideal specific for schistosomiasis, while the proper remedy, the prevention of the discharge of urine and faeces into surface water, is already to hand. These examples could be multiplied indefinitely.

Among the refugees malaria and eye disease (Fig. 3) are the two great scourges, with dysentery third. The skins of the poorer refugees are speckled with haemorrhagic petechiae from flea-bites, and lousiness is general. Septic skin conditions are common, especially a crusty impetigo of the scalp or chin in children, favoured by contact with unlaundered head-cloths. Gingivitis is common, especially in the camps. Hysteria and neurosis are not infrequent, but neurological disease is rare. With the exception of diabetes mellitus, endocrine disease seems scarcely to occur. Peptic ulcer is common, the interminable cups of black coffee being perhaps a predisposing factor. Only one case of cerebral vascular catastrophe was seen in nearly six months of busy hospital and clinic work. In the same period there was only one case of gonorrhoea, and not a single fresh case of syphilis. This is the consequence of the strict sex morality of the Arabs. An unmarried girl who becomes pregnant must flee or risk death from her father's dagger. Two cases of cancrum oris were seen, both associated with splenomegaly, and one case of hydatid disease. Schistosomiasis and leishmaniasis were practically non-existent, but splenomegaly was extremely common, even in young children. One wonders if these cases were not too readily ascribed to chronic malaria. Of the infectious diseases, measles and whooping-cough were troublesome, typhoid fever occurred sporadically, while typhus was not seen. Mass inoculation against diphtheria, typhoid, and smallpox was attempted, but reached only a small proportion of the refugees in Jordan.

Tuberculosis was seen frequently in all its forms with the exception of miliary and meningitic. Abdominal and bone tuberculosis seemed especially common. Owing to the small number of hospital beds most of the cases diagnosed had to be returned to their crowded room or tent with only a bottle of cod-liver oil for succour. It is probably this lack of hospital treatment which made the incidence of tuberculosis appear so high to the medical observer. It was strange to see the spotless and efficient Scandinavian B.C.G. teams at work among ragged Arab children, and a surprise to learn their results. Only 13.5% of the children tested in Jordan were tuberculin-positive.

Antimalarial work has been confined to residual spraying of tents and houses with D.D.T. Undoubtedly this has resulted in a reduction in the number of fresh cases. Clinical malaria, however, continued to be general throughout the villages of the Jordan valley in the malaria season. More than a hundred cases were sometimes seen at a single village clinic, often of a most virulent type. It seems that D.D.T. spraying of living quarters is not enough, and should be combined with spraying of breeding-grounds, as was done in Egypt and Cyprus. In the Jordan valley a campaign of this kind would founder if confined to one side of the narrow stream. This raises awkward problems of co-operation between Arab and Israeli health authorities. Probably the only way to achieve a quick result lies in the issue of proguanil to refugees in suppressive doses (mepacrine is likely to be used as a dye for head-dresses, and is therefore taboo). Ideally, chemists might be called in to advise on the possibility of mixing powdered proguanil with some item of the dry rations, thus obviating a black market in proguanil and ensuring that the drug is taken. Refugees sometimes keep tablets tightly wrapped in some corner of their clothing, and proudly display their hoard to the doctor weeks later.

The Arab's Attitude to Disease

To the Arab mind every disease has its remedy, injections and surgery being the two great avenues leading to cure. Tablets and medicines are usually scorned, and every third patient given these will demand an injection instead. On one occasion a father carried his sick son from doctor to doctor in a small town inquiring the price of "an injection" at each, until finally one was offered that suited his purse. This excessive reverence for the syringe is shared by the better-class Arabs. A wise old sheikh questioned on the matter did not hesitate to lay the blame for this attitude at the door of the medical profession. The situation has now reached such a pitch that many patients would refuse to pay their doctor unless treated by injection therapy.

If the Arab is told his disease is incurable he does not accept this decision, but resorts to remedies of his own. Indeed, these are often employed before consulting the Westernized doctor. The favourite remedy is some form of cautery applied to the skin, and the bodies of the poorer Arabs bear their medical histories literally branded on to their skins. Examples seen are branding over the spleen for splenomegaly, in the suprapubic area for menorrhagia, or over the leg for gangrene of the toes. Parallel rows of skin incisions are often inflicted on children for fever. Occasionally the services of an infamous type of witch-doctor are sought, who employ such methods as chaining and flogging, usually in cases of mental disease. Other Arab medicine men have achieved a considerable reputation in setting fractured bones. A mixture of goats' hair and white of egg is used to make a plaster, reinforced by pieces of bamboo. Ignorance regarding the limitations of surgery is general, and many people suffering from incurable medical diseases believe they could be cured by the knife.

The Arab Refugee

Refugee relief work inevitably carries some unpleasantness in its train. Resources of food, clothing, and hospital accommodation never seem equal to demand. The destitute refugee naturally resorts to every device at his command to obtain as much of the available bounty as possible for himself and his family. Ration cards and birth certificates multiply in geometrical progression, while notices of deaths are suppressed. The issue of new food cards or clothing is likely to end in free fighting. This constant undercurrent of suspicion, combined often with overwork, wears down

the nerves of many a relief worker, and may unfairly colour his judgment.

Considering his wretched circumstances, the Arab refugee is often a fine and pleasant individual. In generosity, in religious devotion, and in the ability to play the part of host, he excels. Refugees show their gratitude by gifts of fruit, eggs, live pigeons, and even horses. Against these qualities their blind faith in destiny or Allah encourages a fatal *laissez faire* attitude of mind. In fact, their religion seems to perpetuate the natural inability of the nomad to organize or to help himself. For the simple nomadic or agricultural life this is perhaps no disadvantage. In the bitter struggle for existence which the present day has forced on the Arabs this attitude of mind may well prove their undoing.

To sum up, the immediate necessities of relief have been met, and, considering the magnitude of the operation, met well. Work for this mass of unemployed people must now be found, and is, in fact, overdue. A scheme for resettlement in their countries of adoption already exists on paper in the form of the proposals of the Clapp Commission. The eyes of all are now turned to the United Nations to provide financial backing for these long-term projects of lasting benefit.

If the opportunity is seized perhaps some benefit may still be won from the disaster of the Arab refugees.

I wish to express my thanks to Dr. C. Draper, late of British Red Cross, for the use of his photographs. I also wish to thank the unknown photographers whose prints have come into my possession.

MEDICINE IN YUGOSLAVIA

BY

RAINSFORD MOWLEM, F.R.C.S.

Surgeon-in-Charge, Plastic Department, Middlesex Hospital, and Centre for Plastic Surgery, Hill End Hospital, St. Albans

It is now almost five years since the foundations of an association between plastic surgery in Yugoslavia and in Britain were laid by Sir Harold Gillies. Shortly after his visit a team consisting of a surgeon, an anaesthetist, a dental surgeon, and a nursing sister was sent from this country to establish a unit at a relatively new hospital on the outskirts of Belgrade. This team was followed by others over a period of about two years, and during that time we had the opportunity of training several Yugoslavian surgeons in this country. They returned to carry on the good work after the withdrawal of our men. Periodic visits on a relatively small scale have been made since that time, and two of us have recently returned after a comprehensive tour of the country. This trip, like its predecessors, was arranged at the instigation of the Yugoslavian Ministry of Health, and the details of it were carried out through the good offices of the British Council in London and in Yugoslavia.

The itinerary included Zagreb in the north, Ljubljana in the north west, Split and Dubrovnik on the Dalmatian Coast, Sarajevo in Bosnia Herzegovina, and finally Belgrade, the capital. With the exception of the somewhat sparsely populated region in the extreme south east, we had the opportunity of seeing conditions throughout the greater part of the country. We were therefore made familiar with the many facets of the problem of providing hospital services under differing circumstances.

We made contact with the local practitioners, usually through their own association but also through the academies which correspond in part with the senate of a university in this country. We were enabled to visit hospitals and clinics, some of which we saw by arrangement and others without previous warning. Lectures were given in both anaesthesia and plastic surgery, and these proved to be extremely popular—it was indeed not uncommon to have more than 95% of the available doctors present at any lecture. Everywhere we met with overwhelming hospitality and with good will.

Dubrovnik (Ragusa) in Dalmatia

Problems of Medical Practice

It would be invidious to suppose that such a visit could give an accurate and clear-cut picture of all medical problems facing Yugoslavia. It would be an impertinence to draw conclusions of a major character from such a kaleidoscope of impressions. Indeed, we are too close as yet to our experiences to do much more than record what has been seen and done.

The first outstanding problem is that of providing a population of 16,000,000 with a full-scale, full-time, medical service when there are only about 4,000 qualified medical men. A great number of them serve in military hospitals, but no distinction is made between any hospital in the country over the admission or treatment of patients. Although the administration of two adjacent hospitals may differ, the function of these hospitals and the types of patients seen in them will be much the same. Wherever such a group of hospitals exists it is usually served by a large polyclinic which relieves the hospitals of practically all their out-patient work. The staff of the polyclinics and the hospitals is the same, and such an arrangement appears to result in continuity of treatment.

The great proportion of the doctors appear to have received at least part of their training in Austria or in Germany. A few have worked in France or Switzerland. For the past ten years all of them have been completely cut off from any opportunity for postgraduate refresher work, and they have lacked current literature from the countries in which they were trained. Apart from this, most of them were actively engaged in military work, and in many cases they were not employed as doctors; even if they were, their doctoring was occasionally subsidiary to active military commitments. As a whole the practitioners are relatively young men with an extremely sound basic training, but all suffer (and are aware of the defect) from having been unable to keep up with the detailed developments of the past ten years.

The next problem is that "middle staff," as nurses and other ancillary workers are called, is almost completely lacking. In common with many other European countries,

Yugoslavia relied at one time for a considerable portion of its nursing staff upon various Roman Catholic orders. In those parts of the country which we visited these workers no longer appear to be available in any numbers.

The third problem is that the war produced such widespread devastation that there is a real shortage of hospital buildings, particularly of the modern type, and of all those industries which administer directly to medical needs. New building is not contemplated on any great scale, possibly because the rehousing, the provision of facilities for universities, and administrative buildings have priority. There may be wisdom in this, as it appears that shortage of hospital buildings is one of the least of the problems in the provision of a nation-wide service.

Fourthly, there is a great shortage of both medical and surgical equipment. Such shortages are by no means absolute, and wherever the need is urgent some equipment can be obtained; but scarcity imposes restrictions and necessitates improvisation, which, however efficient, makes demands upon the already scarce medical man-power.

Training of Students

These difficulties present only one side of the picture as we saw it. The real question is how such difficulties are reflected in the everyday working of the hospitals and how they are being overcome. It must be remembered that we saw only the institutional side of the service and my comments are upon this aspect only. We had little opportunity of seeing the difficulties of general practice.

The dearth of doctors is being overcome by an increase in the number of medical faculties to five, compared with the three existing before the war. The number of applicants for medical training seems to be far in excess of the number that can be accepted, even though each school is carrying far more students per bed than is desirable. In Zagreb, for example, there are approximately 3,000 medical students, although only about 700 beds are available for their training. This difficulty is very real, but it has been reduced by the intense enthusiasm of the medical staffs, who accept one or two daily lectures as routine. In addition to this, much has been done by the creation of photographic libraries which enable the student to gain some idea of the uncommon conditions which he cannot hope to see in the living patient during his training. The authorities anticipate that within two years some additional medical help will be available, but it is clearly realized that a further five years must pass before there can be a reasonable supply of junior specialists. During that period it is hoped to decrease the number of students at each university to enable each of them to obtain a more extensive basic training; but for the moment it is thought that the great need justifies the provision of as many qualified men as possible.

The lack of nursing staff is being dealt with in two ways. In the towns, training colleges for nurses and midwives are being expanded and filled to capacity. Trainees accept with apparent cheerfulness conditions of living which would not be justified except in great national need. The curriculum is short, but again this is said to be only a temporary measure. Difficulties are foreseen in connexion with both doctors and nurses when the present crisis ends and when competition is possible between the present short-term trainees and the later students who will have had a more extensive basic education.

In the country some of the doctors on hospital staffs appear to have young women attached for training, rather like apprentices, and though this method cannot produce many trainees it probably has immediate advantages over the scheme whereby the nurses are instructed in separate institutions. Whichever method is in use, it is most noticeable that all the trainees are extremely young. Many seem to be only 15 or 16 years old and but few are 20.

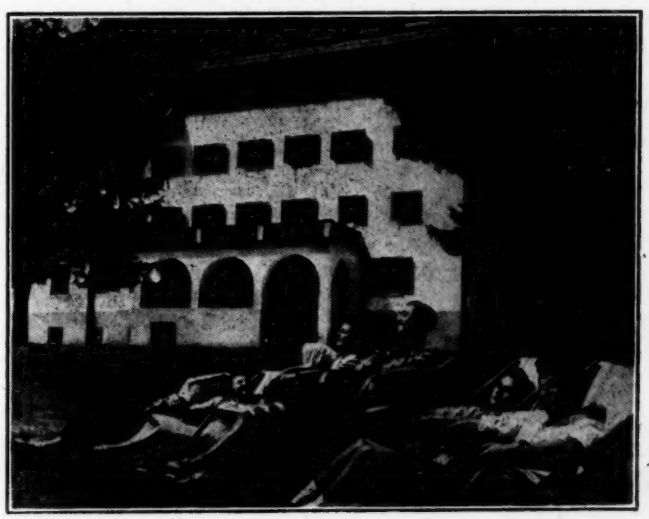
Equipment is not yet manufactured in quantity, nor are many drugs produced in the country. There appears to be little foreign currency available to expend on either of these items. Something has been done by Unrra, by Marshall aid, and by the conversion of allied war equipment. The simple equipment is in constant use, but some is too complicated and insufficiently self-contained to be valuable. An expensive McKesson anaesthetic machine is valueless without nitrous oxide, and little of this is obtainable; an electrocardiograph is not much use if its galvanometer string is not replaceable or if recording film cannot be obtained. These are perhaps minor points, but the finding of alternative apparatus imposes a strain on the practitioner which makes it difficult for him to conserve his energy for treating his patients.

The final result is that the doctors are working extremely long hours seven days a week. They are all full of enthusiasm, and by their own exertions they are doing much to make good the deficiencies in their numbers. It may be that overwork accounts for an incidence of "ulcus duodenale" which seems to a casual observer to be very high—but we had no impression that these ulcers were in any way an excuse for failing to join in the lavish and universal hospitality with which we were invariably received.

These men are carrying the burden of doctoring, of training students and nurses, and of overcoming the difficulties of the present. At the same time they are trying to plan for the future, and in spite of all their secondary commitments they are doing an excellent job of work. There are problems of tuberculosis and other infective diseases which are already being tackled on a national scale. Strong emphasis is being laid on the welfare of children, and everything possible appears to be done for their benefit.

Perhaps the most outstanding impression one retains of an interesting and instructive visit is the desire of all these doctors to acquire the most recent knowledge to enable them to bring their service up to date. They are all realists and are fully aware that the country which is most likely to provide them with what they want is Britain. They are willing and anxious both to receive visitors and to send men here for training, and it is felt that such help may well be to our mutual benefit.

Workers' holiday resort in Slovenia.



Correspondence

Rheumatoid Arthritis

SIR,—Dr. Francis Bach (April 22, p. 957) makes certain unwarranted criticisms of the report (April 8, p. 799) of the Empire Rheumatism Council's controlled investigation into the aetiology of rheumatoid arthritis which clearly indicate that he has completely failed to appreciate the objects and scope of the investigation described.

The main object of the investigation was to determine the incidence in rheumatoid arthritis of certain factors frequently alleged to be of aetiological importance, and to compare this incidence with that in a control group suitably selected in regard to age, sex, and civil status. If any factor was found to occur more frequently in the group of patients than in the controls, this would strongly suggest its importance as an aetiological factor and the need for further investigation. If, on the other hand, the incidence was similar or less than in the control group, the factor would not be held to be of significance if this was based on frequency of occurrence.

In their discussion of their findings the committee made it clear that a factor occurring equally frequently in both patients and controls would be considered to be of aetiological importance only if it was assumed that the fundamental defect in the potential arthritic was a failure to deal normally with the factor concerned. It should be pointed out that at the present time the conception of a failure in adaptation is an attractive but unproven hypothesis which the Empire Rheumatism Council survey was not designed to investigate.

An indication of Dr. Bach's failure to appreciate the object of the survey is his incomplete quotation of the section of the report dealing with psychological factors. He fails to quote the rest of the paragraph qualifying the statement that psychological factors are of no importance—namely, "if this view is based on a higher incidence of such factors in patients as compared to the rest of the population." There is nothing in Dr. Bach's letter to support his statement that the evidence presented and the conclusions drawn may well mislead the young investigator. On the contrary, I believe that those who read the report carefully will agree with the leading article in the *Journal* (April 8, p. 827) in which the writer congratulates the committee on the report, which he says places the study of rheumatoid arthritis on a scientific basis for the first time.—I am, etc.,

Edinburgh. L. S. P. DAVIDSON.

SIR,—The report of the Scientific Advisory Committee of the Empire Rheumatism Council (April 8, p. 799) gives some surprising figures which cannot go unchallenged. In the remarks about familial factors in rheumatoid arthritis it is stated that 3% of fathers and 9% of mothers of the controls suffered from arthritis. If we accept this it would mean that, as marriage has not been found to be an important factor, over 2,000,000 cases of arthritis (presumably of rheumatoid arthritis, as the report deals only with these) would be present in the population. Fortunately this is not so, the number being nearer 270,000, unless the incidence in Britain greatly exceeds that given by Comroe for the United States.

But these percentages, and much else in the report, are based on statements of patients regarding their impressions, and why should these be more trustworthy than the clinical impressions of medical practitioners?—I am, etc.,

Leamington Spa, Warwickshire. BARBARA CRAWFORD.

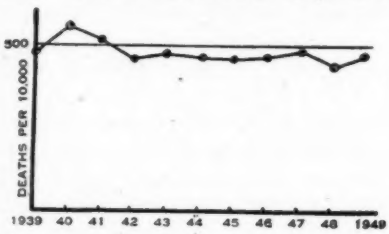
SIR,—I notice that the Scientific Advisory Committee of the Empire Rheumatism Council (April 8, p. 799) find the association of allergy and rheumatoid arthritis to be "not proven." It is a fact, however, that in many cases the symptoms of chronic asthma clear up entirely, after which rheumatic disease develops. And it is rather significant that injections of adrenal and pituitary extracts temporarily relieve both conditions. It is only by a long life in general practice that one gets the opportunity of such observation.—I am, etc.,

Upholland, Lancs. J. THOMSON SHIRLAW.

The Granny Racket

SIR,—I had no wish to re-enter the controversy over "Granny," but I must defend myself from the charge of casting unsupported aspersions. My criticism (March 26, p. 683) of Mr. Harold E. Stassen's "Granny" article is concerned not so much with his facts as with the way he uses them.

Mr. Stassen points out (April 29, p. 1006) that his figures are from official British sources. He gives the deaths in nine consecutive quarters from the Registrar-General's return. Good. He then says, "These are the statistics used in my article." Had he used these figures he would have found it difficult to make them mean anything except what they do mean. What he did was to compare the March quarter of 1948, the lowest in 10 years, with the March quarter of 1949, higher but still well below the average, and to suggest that the National Health Service is "probably the principal cause" for this "startling jump." This is not the way statisticians use statistics. In the same vein we might claim that the "startling drop" in the deaths during the first quarter of 1948 showed the determination of our grannies to keep alive till the millennium dawned in July. The death rate for 10 years is shown in the accompanying graph, which needs no comment on my part.



Mr. Stassen says, "My report of the slight decline in the number studying medicine was based on the *British Medical Journal*." Had Mr. Stassen merely reported a decline in the number accepted for study I should have had no criticism to offer: but by putting the figures between the words, "There are signs of an unfortunate effect on the British medical profession itself" and "some of the more ambitious plan to leave the country," he uses the decrease in the number of students admitted to imply that it is due to decrease in the number seeking admission. This is of course the reverse of the truth. Ten men and 50 women are applying for every vacancy in the London medical schools, and much the same position is found throughout the country.

He says, "It is almost impossible to be operated on for hernia in London without a year of waiting." In my beds at Guy's no man has had to wait longer than seven months for a hernia operation and no woman more than two months: in the beds of the assistant surgeons the delay is about half this time.

He says that his article was written for his fellow citizens and not intended as criticisms of the decisions of the British people. His choice of the *Reader's Digest* upset this intention. I do not wish to be unjust to Mr. Stassen, nor do I wish to paint our health service as perfect or even very good. I can think of nothing more likely to improve it than informed and honest comment like that of Professor James Howard Means, of Harvard, in the *Atlantic Monthly* for March.—I am, etc.,

London, W.1. HENEAGE OGILVIE.

Early Rising for Puerperal Women

SIR,—In view of the great importance of the subject matter of the paper by Dr. A. B. Swarbreck (April 22, p. 936) and his conclusion that "early rising seems to have no deleterious effects," it is a pity that the reader is given so very little information. Although the essence of a controlled trial must lie in its construction and in the resulting statistics, we are told neither how the trial was set up nor, except very cursorily, the answers it gave.

In regard to its setting up Dr. Swarbreck states that "after delivery the women were unselectively distributed between two wards, C1 and C2," early rising being permitted in C1 and not in C2. Yet this "unselective" distribution has led to the curious result that there were 18 cases of caesarean section in ward C1 and none in ward C2, and also, according to a statement subsequently made in the text, to 55 cases of lacerated cervix amongst primigravidae in C1, a figure which was "almost four times the incidence in the C2 group." These differences are

both most unlikely to have occurred by chance, and one is left wondering what other differences between the two groups (presumed in the comparisons to be equivalent) may not have been produced by this undefined method of "unselective distribution."

Passing from these serious and unresolved doubts on the basic equality of the two groups to the answers actually found, one notes that Dr. Swarbreck observed *nine* different features in the immediate post-natal period and *fourteen* at the post-natal examination six weeks after delivery. But all the reader is told is that "no statistical difference between the groups was recorded under any of the heads" in the period immediately following delivery, while at the later post-natal examination the four "significant" differences (against early rising) can be explained for reasons given in the paper. Yet neither absolute numbers nor incidence rates are given to allow the reader to judge the results of the experiment for himself.

Technical tests of "significance" have their value, but they should not—in fact *cannot*—replace the basic data. Quite a simple table could have given all the information to the reader. At present, in my view, he or she can hardly be expected to accept Dr. Swarbreck's conclusion that "early rising entails no risk to the recently delivered woman." It may be so, but no case is made.—I am, etc.,

London, W.C.1. A. BRADFORD HILL.

Hospitality for Overseas Visitors

SIR,—Once more I appeal through your columns to the hospitable instincts of our members on behalf of our overseas' medical visitors from the Dominions and Colonies. Last year, as a result of my letter to you (April 30, 1949, p. 775), we received offers sufficient to cover our needs; but this year we are in touch with a larger number of overseas doctors and their families than ever before, and our need will be correspondingly greater. There is no better place in which our visitors and ourselves can get to know one another than the "home," and a week-end in the country or by the sea is a welcome refreshment to students in the cities. Our postgraduate medical visitors are scattered throughout the country in the University centres, the largest numbers being in London, Edinburgh, and Liverpool.

I shall be very glad if doctors willing to offer hospitality to overseas visitors for one or two days, or even longer, would write to me stating what they are able to offer.—I am, etc.,

Empire Medical Advisory Bureau, B.M.A. House, Tavistock Square, London, W.C.1. HUGH A. SANDIFORD.

Recent Advances in Otolaryngology

SIR,—Your reviewer was kind enough to make some very complimentary remarks (April 22, p. 942) about my book *Recent Advances in Otolaryngology*, but in fairness to my publishers I think I should answer some of his (admittedly minor) criticisms. No mention is made of a daily dose of penicillin because that was not considered adequate when the book went to press in January, 1949, but the twelve-hourly dose, then new, is mentioned; tyrothricin, though mentioned, had not yet had time to induce anosmia or anything else; and glossitis from using penicillin lozenges is actually mentioned on page 2. Mr. Mollison's work on alcohol injection of the labyrinth in Ménière's disease and Mr. Harmer's on radium implantation in cancer of the larynx were each omitted because they had been discussed at length in the first edition of the book fifteen years previously. There are obvious technical difficulties in these days in producing any book to be called *Recent Advances*—but they are made apparently worse when a review in a weekly journal appears twelve months after the book has been published.—I am, etc.,

London, W.1. R. SCOTT STEVENSON.

Amenorrhoea and Oedema

SIR,—Dr. G. I. M. Swyer's interesting account of the oral treatment of menstrual disorders with hormones (March 18, p. 626) prompts me to draw attention to a possible alternative method of treating amenorrhoea that does not seem to be so well known as it should, since it is simple, safe, and, I believe, often effective. I refer to the giving of suitable doses of alkaline salts by mouth as described by Dr. H. G. Close and myself many years ago.[1]

Alkalis were given in increasing doses as a mixture containing equal parts of potassium citrate and sodium bicarbonate. The total effective daily dose varied in different patients from about 150 to 400 gr. (10–27 g.) or more. Unless there is also renal disease the dosage need not be controlled by periodical estimations of the plasma bicarbonate. Treatment should be abandoned if signs of intolerance appear. The method is based on the observation that when treating patients suffering from nephritis and oedema with alkalis, many of whom have long-standing amenorrhoea, the normal menstrual cycle is usually resumed as soon as a diuresis is procured of sufficient magnitude to cause loss of oedema. The resumption of a normal menstrual rhythm in these circumstances is so regular that it can hardly be ascribed to chance or to a purely psychological effect.

It is not suggested that restoration of normal menstruation in nephritis is necessarily desirable. On the contrary, nephrologists are only too familiar with the devastating effects that menstruation may have on the course and prognosis of nephritis and chronic renal disease in general, especially when renal function becomes impaired, when it may be the immediate cause of the final renal or cardiac breakdown. In view of the effects of alkalis on amenorrhoea in nephritis the method was tried in a small series of non-nephritic women attending hospital for "debility" and amenorrhoea, including a few with "primary" amenorrhoea. Regular menstruation was resumed or begun in a majority as soon as the effective dose of alkali had been attained, but often continued only so long as this dose was maintained. Similar results with this method have since been encountered on many occasions, but, as the treatment of amenorrhoea in non-renal disease is outside the scope of my work, sufficiently careful records to permit of statistical evaluation have not been kept.

The theory advanced at the time (loc. cit.) was that the action of the hormones concerned in menstrual function was modified or rendered inoperative by the presence of a generalized tissue waterlogging that we believed commonly accompanied that state of subnormal health generally referred to as "debility,"[2] a view that would seem to be supported by the frequency with which amenorrhoea is associated with that form of chronic oedema of the feet and legs described by me[3] and by Whitfield and Arnott.[4] This form of oedema, which is exceedingly common in women, comparatively rare, or inconspicuous, in men, and which, so far as I am aware, does not occur in children (except possibly in infants), is essentially a generalized tissue waterlogging associated with changes in the normal water-electrolyte pattern of the tissues similar to those that accompany menstruation.[5,6] Under the influence of gravity the oedema usually presents in the feet and legs, but sometimes the hands and even the face are involved. Other clinical manifestations of this waterlogged state are believed to be a general feeling of "unwellness" and depression, headaches, sometimes associated with temporary hypertension, oligo- and amenorrhoea and, possibly, subfertility—many of the symptoms, in fact, of a premature and temporary menopause. Not infrequently there is also a tendency to obesity.

Given the conditions necessary for the formation of oedema, its distribution, and therefore the symptoms to which it gives rise, will, apart from gravity, be largely determined by the relative affinity of the particular organ or tissue for water—i.e., in part upon the pre-oedematous electrolyte composition of the tissue in question.[7,8] The sex and age incidence of this form of oedema suggest that it is essentially an exaggeration of the relatively high water content of the tissues in normal adult women, of which the physiological oedemas of the premenstrual phase and of pregnancy are other examples.

Whether, and to what extent, the kidneys are implicated in the production of this syndrome is uncertain. Renal function (measured in terms of the behaviour of non-electrolytes) is stated by Raaschou and others[9] to be somewhat lower in normal women than in normal men, though this view is not held by Hogeman.[10] Methods for assessing the capacity of the kidney for dealing with electrolytes are less developed and less precise, so that slight, though significant, degrees of impairment in this function may be overlooked. It is certain, however, that when

renal function (as usually measured) is impaired in renal disease menstruation will sometimes cause a temporary increase in the degree of impairment. Moreover, I have recently obtained evidence that menstruation will sometimes cause temporary impairment of renal function in apparently normal women. It is not unlikely, therefore, that oedema associated with endocrine imbalance results primarily from the effects of such imbalance on renal function.

It is difficult to escape the conclusion that the very large group of adult women suffering from "idiopathic" oedema of the kind referred to, often but not invariably associated with oligo- and amenorrhoea, constitutes a fairly well defined syndrome that is probably endocrine in origin. Lest false hopes be raised it is necessary to add that none of the symptoms of this syndrome appear to respond to alkaline therapy so readily as amenorrhoea.—I am, etc.,

London, W.1. A. A. OSMAN.

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Foetal Loss in Breech Presentation

SIR,—Dr. Francis Redman (April 8, p. 814) has done valuable service by his argument that breech presentation in the multiparous patient requires the same obstetric skill and attention as that in the primigravida. Most obstetricians are in agreement that it is not fair either to midwife or patient to allow any sort of breech presentation to be delivered away from medical aid. There are, however, a number of points in the article that require further discussion.

It is stated that there was no selection of cases for hospital confinement and that the figures represent a fair sample of all breech presentations. This would appear to neglect the fact that all hospital cases are selected in the first instance by practitioners and clinics, and that there is a fair probability that many multiparous patients with breech presentations were delivered in their own homes. The patients sent to hospital would include a higher proportion of potential abnormalities.

It is a pity that "correction" of the figures for foetal loss leaves only 19% for final analysis, a figure too small for real significance when it is admitted that in a further 25% the breech presentation *might* have contributed to loss of the baby. This latter column includes six cases (five primigravid and one multiparous patient) of unexplained death during labour but before delivery. Necropsy findings are not given, so that it is impossible to distinguish between cerebral haemorrhage and intrauterine asphyxia, but the latter must be presumed to be the cause of death, which is then directly due to the presentation. It is not generally realized how low in the foetal abdomen is the common site for the umbilicus and how easy it is to get pressure on the cord when the extended breech engages deeply in the pelvis. This pressure and the resulting intermittent foetal asphyxia accounts for much of the meconium passed in breech confinements and also for the occasional foetal death in the first stage of labour. The pressure is caused by maternal "soft" parts, and hence is chiefly noted in primigravidae.

Two other points require comment. A contracted pelvic outlet is not so lethal to the baby as a contracted brim, since it is usually possible to establish respiration with the baby's mouth exposed by a speculum and the head still in the pelvic cavity, and then to deliver the after-coming head with forceps free from the danger of cerebral haemorrhage, since the asphyxial congestion will have abated. Finally, it is well to remember that the number of tragedies from breech deliveries in the absence of any attendant will inevitably increase with the routine booking for institutional delivery of multiparous patients. External version should be widely practised, but there will always be a field for domiciliary midwifery by the obstetrician.—I am, etc.,

Birmingham. W. G. MILLS.

Spinal Analgesia for Caesarean Section

SIR,—As I know from personal experience, the inertia which has to be overcome when contributing to your columns is not lessened when failure and not success is to be recorded. Drs. A. H. C. Walker and S. Matthews are therefore to be congratulated on their article (April 22, p. 938).

Warning of the dangers of unskilful spinal analgesia is no new thing. In 1900 an editorial[1] stated "the apparent simplicity of the manœuvre constitutes its greatest danger in the hands of the tyro." Half a century later the *Year Book in Obstetrics and Gynecology*[2] tells us "the factor most contributory to its tragic history is the ease with which it can be performed by anyone." I believe the outstanding thing to be learnt from the communication of Walker and Matthews is that a patient is entitled not only to a competent surgeon but also to the services of someone with special training in the hazards of the various methods of pain relief. In the hands of the trained anaesthetist spinal analgesia is certainly as safe as any other means of pain relief for caesarean section, for he is aware of the problems involved.

In any abdominal operation under spinal analgesia the intercostal muscles which expand the lower and more mobile part of the thorax are paralysed: respiration depends almost entirely on the diaphragm, and the action of this is greatly impaired by any large abdominal tumour, particularly if the patient is placed in the Trendelenburg position. A spinal analgesic should not be given for any abdominal operation unless oxygen can be administered throughout. For an appendicectomy this addition may be a mild luxury, but for a caesarean section it is absolutely essential. Any medical man should have difficulty in defending himself for failing to observe this fundamental rule.

I refrain from commenting on other points in the article lest they lead away from the main issue. If, during caesarean section under spinal analgesia, the woman is given oxygen she will be all right: if air only is breathed she stands a good chance of dying. Let us rid our minds of the nonsense that there are subtle biochemical changes which make the parturient woman particularly susceptible to spinal analgesia. The dangers from an ovarian tumour of equal size are equally great. The view that the problem is a straightforward one of elementary mechanics of respiration and of oxygenation is borne out by the following points. No one seems to fear saddle-block spinal analgesia for forceps delivery, for here the action of the drug is confined to the cauda equina. The tragedies I have read of in caesarean section under spinal analgesia have all occurred before the foetus, which splints the diaphragm, has been delivered. It is not uncommon to hear a woman sigh with relief immediately after the baby is extracted and volunteer the remark, "That's better, I can breathe comfortably now." I do not know of any maternal death when oxygen has been given throughout, and, *a fortiori*, I do not know of any death when the patient has been supervised by a trained anaesthetist.—I am, etc.,

Oxford. R. R. MACINTOSH.

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2 *Year Book in Obstetrics and Gynecology*, 1949, Chicago, p. 161.

SIR,—I read with interest the report of two successful post-mortem caesarean sections following spinal analgesia (April 22, p. 938), and, although I note that it is not the purpose of the authors to discuss the advantages and disadvantages of spinal analgesia for caesarean section, I think that their technique warrants some comment.

No mention was made of a second doctor being present when the spinal analgesic was administered, and no doubt the situation precluded such a luxury—or I should say necessity—for surely it is essential to have someone present to administer oxygen to the patient.

The muscles of respiration are sorely embarrassed in such a combination of circumstances. The diaphragm is splinted by the pregnant uterus and is probably quite inactive, and the analgesic drug paralyses at least the lower intercostal muscles. The result is that the patient must have assistance in respiration with a high oxygen mixture so long as the situation exists. Both the patients mentioned were "exhausted, and suffered

from malnutrition and some degree of anaemia," and were thus rapidly vulnerable to asphyxiation.

There is surely no particular susceptibility of the pregnant woman to spinal analgesia. If the intercostal muscles are paralysed the same effect would be obtained by any tumour of the abdomen large enough to splint the diaphragm.—I am, etc.,

Aberdeen. A. W. RAFFAN.

SIR,—Spinal analgesia is an excellent and safe method for use in caesarean section, but it is not an agent for the inept or careless anaesthetist.[1] Rufus C. Thomas[2] maintains that a great deal of his success in this type of analgesia is due to his choice of analgesic, which is heavy nupercaine. In a summary of the position up to that time J. B. Greenhill[3] says, "The point made by Thomas, about the type of anaesthesia used, is important, and if Thomas is right, surely all the enthusiasts of spinal anaesthesia who have had any fatalities from drugs other than heavy nupercaine owe it to their patients to use this anaesthetic and no other."

It is unfortunate that occasional wrong choice of agent should do so much to bring this excellent method into disrepute. In an article in the *Journal* (April 22, p. 938) two deaths from spinal analgesia are recorded. Three of the universally agreed contraindications to the use of this method of analgesia are (1) poor general condition, (2) anaemia, and (3) hypotension; all three contraindications were present in both subjects.

In a further paper in this same issue entitled "Early Rising for Puerperal Women" by Dr. Allan B. Swarbreck (p. 936), the regime carried out includes the removal of non-absorbable sutures on the eighth day. I find that non-absorbable sutures cause a great deal of discomfort to women in the puerperium—some even say that this discomfort is much greater than the actual labour and delivery. I therefore remove these sutures on the fifth day and occasionally (at the latest) on the sixth day. The perineum is always firmly united at this time if it has been properly sutured and dressed. Why, therefore, subject the patient to two further days of discomfort?—I am, etc.,

Galway. D. T. O'DRISCOLL.

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3 *Year Book in Obstetrics and Gynecology*, 1949, Chicago, p. 161.

SIR,—It is unlikely that many of your readers will be misled by the article on post-mortem caesarean section by Drs. A. H. C. Walker and Stafford Matthews (April 22, 1950, p. 933). Nevertheless, I feel that certain points should be emphasized in order to prevent wrong impressions being gained. (1) "Both patients were exhausted, and suffered from malnutrition and some degree of anaemia." This is hardly the type of patient one chooses for spinal analgesia. (2) "Stovaine" was the drug used, presumably Barker's solution, and a large dose (2 ml.) was injected. In view of the known toxicity of this drug, its use can scarcely be justified. (3) Both patients collapsed so soon after the injection (in one case after 10 seconds and in the other "immediately") that I can only suggest the solution must have got into the blood stream by mistake. (4) A further 17 caesarean sections under open ether without a death are quoted. What does this prove?

In conclusion, I would point out that there is an ever-growing number of anaesthetists using small or medium doses of nupercaine who are getting very favourable results with spinal analgesia for caesarean section. Properly used, with the correct precautions, it is a safe method for mother and child.—I am, etc.,

London, N.18. G. S. A. KNOWLES.

Anaesthesia for Fenestration Operation

SIR,—I was gratified to see that my communication (February 18, p. 436) on the subject of anaesthesia for fenestration had provoked a considerable number of other letters. There are some points to which I should like to reply.

Dr. M. Swerdlow (March 11, p. 608) suggests that my use of trichlorethylene with adrenaline is unwise. That may or may not be, but I can only say that I have used this combination in several thousand ear-and-nose cases without any dire results. The pulse irregularities, chiefly extrasystoles, which I reported had occurred in some of the earlier cases, quickly disappeared when the trichlorethylene was reduced in quantity, and in no case did the patient's general condition give rise to any anxiety. I would, however, suggest that Dr. Swerdlow's use of "open ether" is risky in the presence of so much electrical equipment, particularly the dental drill, which is prone to spark. Ether, too, is notorious for the post-operative vomiting it so often produces.

I found Dr. S. A. Mason's letter (March 11, p. 609) most interesting, but I cannot help feeling that an adequate airway must be difficult to maintain with nasopharyngeal tubes alone owing to the degree of rotation of the head. I personally prefer a nasal tube to the oral tubes advocated by several of the writers, for the following reasons: (1) the patient can be intubated during light anaesthesia; and (2) there is less risk of straining with a nasal tube (an oral tube, passing as it does over the base of the tongue, necessitates a much deeper anaesthesia to prevent straining). No trouble has been experienced using medium-sized nasal tubes, which are less traumatic than the "drain-pipe" variety beloved of some anaesthetists. A good flow of gases (8–10 litres per minute) reduces rebreathing to a minimum.

It has not been found necessary to give a glucose-saline drip, as the patient recovers consciousness rapidly and is able to take fluids freely within an hour or so of operation, and frequently takes solid food within eight hours, owing to the rarity of post-operative vomiting.

I find it difficult to understand how Dr. J. Montgomerie manages to persuade the surgeon to operate on patients in the position described in his letter (March 25, p. 730)—i.e., with the head above the level of the manubrium. The usual position for fenestration is with the head slightly extended upon the neck and rotated as far as possible. In this position some venous stasis in the head and neck is inevitable. The role of the anaesthetist is, surely, only to provide an anaesthetic which does not in itself increase this stasis. The "cadaveric" whiteness described by Dr. Montgomerie suggests it may be associated with a dangerous degree of cerebral anaemia.—I am, etc.,

Salisbury. B. G. HUTCHINSON.

Relief of Asthma

SIR,—Your recent annotation (April 22, p. 949) is a mere abstract of the paper by Gay and Long.[1] Your readers might like to know that workers in this country and on the continent[2,3] who have used isopropyl*nor*adrenaline successfully over a number of years, probably longer than Gay, do not agree with him on all points. I, for one, think that the 0.5% aerosol is too weak except for mild cases of asthma. It is very important to abort the attack as quickly as possible, and the 1% solution—the standard solution in this country—is more suitable for this purpose. I am afraid Gay and Long overlook the fact that bronchial spasm varies in intensity and that the severe attacks need stronger spasmolytics. The dosage must be found individually; for some cases solutions even stronger than 1% are required.

Needless to say the subcutaneous administration of isopropyl*nor*adrenaline, although interesting, has no practical importance. Relief by aerosol or by sublingual tablets is immediate, and there is no reason to resort to injection.—I am, etc.,

London, W.C.1. H. HERXHEIMER.

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2 Voegtli, W., and Verzar, F., *Schweiz. med. Wschr.*, 1945, **75**, 457.
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The G.P. at the Crossroads

SIR,—From talking to other doctors and reading the letters in the *Journal* it is obvious that something has gone wrong in general practice to-day. We treat the same people and similar complaints, and many of us have been doing the job for many a long year, and it is puzzling to say what has happened to bring about the change, for change there is. The doctor is

more irritable with the patients and they are noticing it and commenting on it. The patients are more aggravating and the doctor is noticing it. I feel that the time has come when we must analyse the problem dispassionately so that both the public and our representatives can take some steps to alter the present trend before it is too late.

Whatever the advantages may be of a free medical service, there is no doubt that it was introduced as a vote-catching piece of political propaganda and the public urged and entreated to rush in and get the benefits of free everything. At the inception of the N.H.S. one medical M.P. came to this district and told a meeting how they were to set about reporting a doctor if he did not do what the patient wanted. In fact every endeavour was made to antagonize the public against the doctor, who was made to appear as an ogre who was trying to stop the public getting its long-cherished dream of a free medical service. We are now paying the penalty of this rupture of the doctor–patient relationship. The patients have little respect for us, and come not with requests for our advice but with demands for their right to have a free issue of something.

Our status in the social scale is going down week by week as it becomes ingrained into the public that they can march into our surgeries, demand our signature on some piece of paper or, if refused, change to another doctor or report us for disciplinary action. The public must now get its own way, whether good or bad, or "somebody has got to be summonsed."

There are two sides to this problem and they had better be dealt with separately.

The Doctor.—What has he got out of the change? He was promised more help and an easier life and no bad debts. He has got much more work, in many cases less income, no bad debts, no help at all, a lot of personal frustration, has lost his soul when he lost the right to sell his practice, and feels that he no longer runs his practice—it is run for him. The doctor now feels that he is chasing his practice downhill all the time with no hope at present of ever catching up. It is a question of doing the bare minimum for everybody in order to get through the day's work.

At once someone is bound to say, "If you are overworked why don't you take a partner?" The answer is simple: even in a successful practice the doctor cannot afford help to-day. In Essex we are paid 4s. a quarter, which is about 3½d. a week. All the patients are registered with some doctor or other, so that if one takes in a partner it is only to give away a share of one's income. The new man cannot increase the practice unless he succeeds in snatching something away from another doctor in his area. Under the old scheme of things at least the new man paid a capital sum in purchase price, which compensated for the loss of income.

Another reason for not giving away a share of one's present-day income is that many of us have growing children who are just setting out on their university education and the expense is proving very heavy. All this apart from the fact that the cost of running general practice has gone up and is going up by leaps and bounds. A surgery maid now wants £3 a week, and a new car is an exorbitant price with the purchase tax added.

Thus we have the illogical position that the general practitioner is in need of help he cannot afford and the Bureau has lists of doctors who cannot get employment.

The remedy is simple. If "Spens" was implemented on the basis of a full list of 2,500, which is anyway the maximum any doctor can deal with properly having regard to the greater use that is made of the free Service by the women and children, then either the doctor with a bigger list of patients would be able to afford help and take a partner or, if he wished to stay on his own, he could still earn a living at a slower and more efficient pace by reducing the size of his list.

Judging from my own practice, I see no prospect of living to retiring age and collecting my pension. My physical endurance cannot last out another 20 years at this impossible pace. I do more rotten work to-day than I ever did before, and I am ashamed that I have to do it. It worries me incessantly that because of the rush I shall miss something that, if I had more time, I should spot. What a tragedy that the present-day G.P. needs a pair of running-shorts more than medical equipment!

There are many other aspects of general practice that are in need of urgent attention. I would say that the first is to put a brake on all those pompous consultants who find it necessary to burst into print and denigrate those of us in general practice because they know of a few black sheep. Already the controversy over the midwifery service has resulted in a lowering in the respect we were held in by the midwives. It is already very noticeable. While not all G.P.s are specialists in midwifery, so too not all the midwives are safe to do normal midwifery, whatever that is.

As to specialists, let them be under no illusion that we do not spot some of their mistakes for them. They would be very humbled if they knew of the end result of some of the cases we send them. For the sake of peace and a quiet life we do not write and point out their errors, being all too conscious of our own shortcomings. They might start to learn some pharmacology now that we are forbidden to use proprietary preparations. I have before me a letter from a well-known and respected consulting physician advising me to give my patient calcium lactate 5 gr. t.d.s. The consulting surgeons are the worst. They seem to have a catalogue of one of the well-known drug houses on their desk and order from it; they too will have to learn the *B.P.* equivalents.

The next item that must also be dealt with soon is the problem of admission of patients to hospital. We simply cannot spend the time and the expense of phoning every hospital within reach because our conscience will not allow us to abandon our patient. I can hear somebody say, "Oh, you should phone the Emergency Bed Service." I tried that twice during the last two weeks.

The first case was a woman who had taken an overdose of amytal and was unconscious. I phoned all the local hospitals and each said there were no empty beds. The last hospital advised me to phone the Emergency Bed Service, which I did. They told me that my case was really an accident and that I should deal with it by sending for the ambulance, which would take the case to hospital. I protested that there were no beds locally but was told that that did not matter: the ambulance would sort that out. I did as I was told. An hour later the hospital that had advised me to phone the Emergency Bed Service telephoned and asked for further details. When I got mad that they were admitting my patient to a non-existent bed I was told, "Oh, we did not think the case was urgent when you phoned the first time."

The second case happened only yesterday. Again I phoned all the local hospitals and again was advised to try the Emergency Bed Service. The patient had gross oedema of the pharynx and was in danger of choking. I was told to send the case to one of the hospitals I had phoned and which had no beds. The patient, an elderly woman, arrived at the hospital at 12.15 and was kept on a chair until 3.45, when she was transferred to another hospital in the group, which also had no beds.

Again the remedy is perfectly simple. Each group of hospitals should have an admission bureau at the chief hospital in charge of a doctor to whom the G.P. could speak. His job would be to take over the responsibility of finding a bed either in his own group or elsewhere once he had accepted the fact that it was a case for admission.

It is probably too much to hope that the vote-sensitive politicians will attempt to protect their employees—the doctors—and discipline the patients when they act without reason. There are a formidable list of regulations which control the doctor but none that deal with the patient. They have now the unqualified *right* to ring up at any hour of the day or night and *demand* the doctor's presence under pain of being reported for failing to carry out his terms of service. Did we bargain that the terms of service were to include being general errand-boys for every neurotic in the country? It appears from reports in the *Journal* that it is not even safe to talk about the case over the phone to determine whether it is urgent in a medical sense. The patient can complain and have you fined. The following case illustrates this problem.

The call was in the early hours of the morning and an excited voice asked me to come at once as her child had got meningitis. Wearily I got out of bed and dressed and drove seven miles to the house. The child was fast asleep on my

arrival. I learnt that the child had awakened during the night and asked for a drink of water. The mother had given the child a glass of cold water, which the child drank greedily and then complained of a frontal headache. That was enough—the diagnosis was made and the doctor sent for.

Again the remedy is simple. If the public must be reassured day and night and the one doctor has to do it, then in all fairness he should at least be allowed to charge the patient a suitable fee. Surely our terms of service provided for us to sleep to gain the strength to cope with the arduous work in the daytime, or are we never to sleep while there is a patient awake in the district?

I would suggest that all patients are made to buy their own dressings and bandages and that only one item be allowed free on a prescription. The doctor could see that in necessary cases the patient had the proper treatment but could penalize the patient out for all he can get by adding an item for which he would have to pay. There must be some scheme which gives the doctor the whip-hand of the situation if the Service is to run and not ruin the nation financially.

The next item that must be solved if the Service is to run properly is the lack of G.P. representation on the hospitals management committees. In spite of our protests and electing doctors to fill recent vacancies, we still cannot get any increased representation. We do not want to be there to cause trouble, but surely they must realize that the policy of the hospitals directly affects the G.P. and his patients. They are to-day fond of using the expression "consumer need," and who is the biggest consumer of the hospital service but the G.P.? Hospitals to-day are altering their running policy to suit the staff and the administration, and we are left with these changes as a *fait accompli*. There is to-day a real danger that the Health Service will founder because the new army of lay officials considers the administration an end in itself.

The Patients.—I find that the patients can be separated into distinct groups. There is the moaning neurotic always attending for more physical treatment for his tortured mental condition; the over-anxious mother who now has treatment for every trivial and often imaginary childish complaint, and who sends for the doctor comforting herself that the weather is not suitable to take the child out to the surgery; those who come because of genuine need; and those who do not come and who ought to but feel that they are being a nuisance. This last group to-day is very large and causes the doctor an immense amount of concern.

What has the patient got out of the new Service? First, a free hospital service which he can use only by appointment and a wait of several weeks; secondly, a free general-practitioner service which is rushed to the point of indecency. The attitude is now not "What can I do for you?", but "What do you want?" Gone are the days of the quiet confidential chat about domestic difficulties. Gone are the days when the doctor was lawyer, philosopher, and friend. Gone are the days when the doctor had time to protect the patient against his own stupidity by insisting on certain measures being taken to protect his future health. Gone are the days of preventive medicine in general practice. What has the patient got out of the Health Service, to pose the question for a second time? Precious little of any material value. His haemorrhoids have to go on bleeding for six months before he can get treatment, her menorrhagia has to go on for nine months before she can get a hysterectomy done, the child's tonsils have to wait up to two years before he can have them out, and even if both ears are discharging and his hearing is in grave danger it may be nine months before he can be dealt with as an urgent case. And having gone into hospital for an operation or an *x*-ray examination the patient has been home two weeks before the G.P. gets the report and advice on the patient's future care and attention.

I have set out some of the complaints and also offered some suggestions on how they can be overcome. Will nobody come to the rescue of the G.P. and his patient?—I am, etc.,

E. ANTHONY,
Honorary Secretary, South Essex Division.

SIR,—Dr. Collings's report on general practice is of particular value for two reasons. First, it suggests a standard for general practice. Secondly it suggests that a considerable amount of work done in hospitals—especially in out-patient departments—could be equally well done by G.P.s in their surgeries. His main argument in each case is that a high standard of working premises is necessary to give effect to his suggestions.

If health centres are established, the requisite standard of premises can be attained. But this goal is so far away that a means of stimulating the G.P. to reach this standard must be found. There is no time like the present, and I should like to make a suggestion to this end. But first a few facts.

Recently I asked several consultants in charge of O.P. departments in hospitals in various parts of the country how many of the folk they saw could be equally well diagnosed and treated by general practitioners. The answers varied from 20% to 70%. So Dr. Collings gets considerable support here. But, with regard to his suggested standard of general practice, I do not think that Dr. Collings realized that this is not possible at present under the N.H.S. scheme. At least I find it impossible. There is nothing I should like better than to be relieved of the burden of the financial side of practice, but I find after much thought that I cannot keep up a high standard of medicine under the N.H.S.

In our partnership three partners work from one surgery, specially designed to provide separate waiting-, consulting-, and examination rooms for each doctor, a side room, and an office. We do simple pathological tests, dressings, plasters, ear-syringing, and so on in the side room. We employ a full-time nurse, a full-time secretary, and part-time reliefs. Our equipment is comprehensive and up-to-date.

The effect of working in such surroundings is that one immediately appreciates the opportunity to do one's work more thoroughly. Time is saved by seeing other patients while female patients are dressing or undressing in the examination room, but this is a small saving compared with the time spent in more frequent examinations and consultations with a partner about the more unusual cases. We find that a list of 2,500 patients each gives a full working day of about 11 hours. Unfortunately we find that if all our patients were on our N.H.S. list our expenses would be so large a proportion of our income that it would be impossible to earn a living.

The economic bias of the N.H.S. is in favour of bad medicine, for the doctor working in such premises as described by Dr. Collings, where the consulting-room is equipped with one chair and a desk and the waiting-room is the street, is financially far better off than the doctor who works in premises like ours.

To counterbalance this, and to stimulate the health centre idea, I make the following suggestion. As the Government proposes to build, staff, and equip these centres eventually, and as G.P.s working in them will at once find a great reduction in their expenses (rent of rooms and car expenses seem to be all that would be left), I suggest that part of this future great expenditure on health centres should now be given to doctors to meet 75% of their expenses. This would immediately stimulate doctors to improve their premises and so their standard of medicine, and would at the same time correct the economic bias of the N.H.S. in general practice. If the health centre idea is to be encouraged, the allowance might only be paid to doctors working in groups of three or more, except in more sparsely populated areas, or under certain conditions.

Application for this allowance would have to be accompanied by accountant's figures, and standard rates would have to be fixed for the main expenses, such as nurses' and secretaries' wages, etc. Advice to local authorities to help doctors to find or improve suitable premises would have to come from the Minister of Health.

This scheme would not only stimulate each G.P. to make the effort necessary to overcome the difficulties which to-day seem to be inseparable from making improvements, but would encourage doctors to work together. For a combined surgery for three or four doctors is easier to plan, and more economical to run, than is a surgery for one. From the doctor's point of view it would provide the foundation of health centres built round general practice and not round local authority clinics, as the Act envisages and the profession on the whole dislikes. From the country's point of view, it would be a far cheaper

means of launching the health centre idea than would be the building of health centres and their staffing on the usual Civil Service and local authority lines.—I am, etc.,

Leeds. R. A. MURRAY SCOTT.

Maternity and the N.H.S.

SIR,—I have read with close attention many recently published letters on the subject of midwifery, and it seems to me a pity that in the pages of the *Journal* and in other fields one finds so great a diversity of opinion about a matter on which surely the medical profession should speak with one voice. I cannot believe that all I read and hear is the result of serious and considered thought.

One must surely consider first the welfare of the patient. I cannot think that anyone would deny that any maternity case would be safest in the care of an expert and in a place where every facility was available to deal with any complication. This surely is the ideal to which we ought one day to come.

Short of this, when beds are not available or the patient takes the responsibility of preferring to be confined at home, her family doctor or a midwife will do their best—but they should realize that they are only doing their best and cannot by the nature of things give all that might possibly be required. To realize this is only common sense and does not imply any disparagement of ability. It is surely foolish for general practitioners to insist that in this one realm they are as competent as specialists. Not many doctors to-day take out tonsils in their patients' homes, and few, if any, will repair a hernia on the kitchen table—once common occurrences the passing of which was no doubt heralded with as much fuss as is the suggestion to-day that a confinement is safer if done in hospital.

The general practitioner will always have an honoured place in medicine, but the degree to which he is worthy of this must surely lie to some extent in the readiness he shows to admit that in such and such a matter others are wiser than he and that his first duty is to ensure the best care for his patients.—I am, etc.,

Richmond, Yorks. C. ILIFFE.

POINTS FROM LETTERS

Mongolism in One of Twins

Dr. E. MARJORIE ROOKE (London, N.12) writes: I was interested in Dr. A. R. Graham's report on mongolism in one of twins (March 25, p. 706), as there was recently a similar occurrence in my practice. In this case the mother was 37 and had one child aged 18 months when the twins were born on August 25, 1947. The girl, a normal child, weighed 6 lb. (2.8 kg.) and the boy, a mongoloid, 5 lb. (2.25 kg.). The paediatrician consulted confirmed the diagnosis and did not advise any specific treatment. When the boy was 16 months old the parents took him to an osteopath, and state that he began to improve immediately after a manipulation of the neck. In any case, whether *post* or *propter hoc*, he now looks healthy, says short sentences, and is just beginning to walk alone. He gets round the room by the furniture at a tremendous rate, and plays both alone and with his sisters. All three children are small but energetic, and put on weight steadily. Last January the twin girl weighed 24 lb. (10.8 kg.) and the boy 21 lb. (9.5 kg.).

Psoriasis and Food Allergy

Dr. W. WINTERTON (Pingelly, Western Australia) writes: I read with great interest the article on psoriasis by Dr. H. W. Barber (January 28, p. 219), and I notice that he reported two cases allergic to cow's milk which became manifest as psoriasis. I saw about 15 years ago two cases of psoriasis which were treated in Vienna by a diet free from animal fat, and both cases of chronic psoriasis were completely free of cutaneous and mucous lesions. Another instance where I noticed the good influence of a similar diet was during the Japanese occupation of Hong Kong. The Europeans there could not obtain butter or lard, and the only source of fat was pea-nut oil. Two middle-aged Europeans lost their psoriasis of many years standing almost completely. One of them developed psoriasis again after the war as soon as she ate animal fat. I think it would be worth while to make experiments on a large scale in this direction.

Smallpox

Dr. D. S. CHOWDHARY (Laindon, Essex) writes: The world is getting smaller and smaller, and the powers that be failed to recognize this fact when they made vaccination optional. If it was necessary to make vaccination compulsory years ago, I think the time has come when it should be made absolutely compulsory. . . .

Obituary

R. G. GORDON, M.D., F.R.C.P.Ed.

The news of the death of Dr. R. G. Gordon on April 26 was heard with deep regret at B.M.A. headquarters, as it must have been among a large circle of colleagues, patients, and other friends in Bath and the West of England. He collapsed while driving his car on Wednesday night and was taken to the Bath Royal United Hospital, where he died some hours later.

Dr. Gordon was in his place, though obviously not well, at the recent Council meeting, when he presented in his usual clear and purposeful manner the report of the Science Committee. A few weeks ago he was the leading witness in support of the Association's evidence before the Royal Commission on Capital Punishment. In the editorial and publishing departments of the *Journal* his loss is particularly deplored. He served twenty-two years on the Journal Committee, for a long period as chairman, and also on the board of directors of the *Journal*, of which he was also chairman. In the revolutionary changes in appearance and method of production which were introduced just before the war he took a leading part. His business ability and his quick appreciation of the exigencies of printing and publishing—techniques far removed from his own everyday practice as a physician—were of incalculable value to his colleagues and to the staffs concerned. But the Journal Committee was only one of something like forty committees, standing and special, on which at one time or another he served. He was not closely identified with the medico-political work of the Association, though he was for five years a member of the Medico-Political Committee, and for one year deputy chairman of the Representative Body, nor was he altogether at his best as a platform speaker. His main work was done in committee, which means that it was anonymous and merged with the work of others. Rarely has a man done so much for the Association and been so inconspicuous in the doing of it. Apart altogether from the contributions which he made to Association work on its scientific and educational side, his friendly and attractive presence will be sorely missed by all who knew him.

Ronald Grey Gordon was born at Monteith, Perthshire, on March 3, 1889. He was sent to school at Charterhouse, but came back to Scotland for his medical training, entering Edinburgh University in 1906, taking his B.Sc., with distinction in zoology, in 1909, and graduating M.B., Ch.B. in 1911. After house appointments in Edinburgh Royal Infirmary and at the Paddington Green Children's Hospital he settled in practice in Bath in 1913, the year in which he proceeded M.D. Bath was then reviving some of its eighteenth-century glory, partly as a result of the new interest in medical hydrology and partly because of the discovery (or publication) of the radioactive properties of its waters and the vigorous development policy of the spa authorities. Shortly after he had settled in the town the 1914–18 war broke out, and he served for four years in the R.A.M.C. in France and the Middle East. On returning, Gordon developed his special interests in neurology and hydrotherapy, and became in 1920 physician to the Royal Mineral Water Hospital, an appointment which he held for ten years. Among other appointments which he held or had held were those of physician to the Bath Royal United Hospital; senior physician to the Bath and Wessex Orthopaedic Hospital at Combe Park, where he had charge

of the physiotherapy department; consulting neurologist to the Stoke Park Colony, Bristol; visiting neurologist to the Ministry of Pensions Hospital at Bath; neurologist in the south-western area to the Ministry of Pensions; and consulting physician to the Trowbridge Hospital. During the recent war he was in command of the Military Hospital at Bath, with the rank of colonel.

During all this time Gordon retained his association with the country of his birth. He was elected to the Fellowship of the Royal College of Physicians of Edinburgh in 1926, and was Morison lecturer to the Royal College in 1947. He was also a Fellow and at one time senior president of the Royal Medical Society of Edinburgh. His book, *The Neurotic Personality*, was published in 1927. Another book, written at about the same date, has a topical application at the moment—*Autolycus: or the Future for Miscreant Youth*. Of a number of works he was joint author: *Paralysis in Children*, with Dr. Maud Forrester; *Introduction to Psychological Medicine*, with Dr. Noel Harris and Dr. J. R. Rees; *Physiological Principles of Hydrology and Chronic Rheumatic Diseases*, with Dr. F. G. Thomson, a former president of the British Medical Association; *The Mental Defective*, with Professor R. J. A. Berry; and *Psychotherapy*, with Dr. D. R. Allison. A field of special interest to him was that borderland where hysterical and rheumatic conditions find common ground. Child guidance was another lifelong interest, and he was a medical director of the Child Guidance Council. He was also a member of the Medical Advisory Board of the Institute of Medical Psychology.

Gordon was representative for his Division of the B.M.A. for many years from 1922 onwards. In 1925 he was acting honorary secretary of the memorable Annual Meeting in Bath—a meeting for which great plans were made but which encountered special difficulties owing to the illness of two of the principal organizers. But for Gordon, said the president at the time, there could not have been any meeting at all. In the following year at Nottingham he was a vice-president of the Section of Neurology and Psychiatry. In 1927, and again ten years later, he was elected chairman of the Bath Division, and in 1947 president of the Bath, Bristol, and Somerset Branch. He became a member of Council in 1929. In 1934 he succeeded the late Sir Robert Bolam as chairman of the Journal Committee, and his presentation year by year to the Representative Meeting of the affairs of the *Journal* during a period of remarkable development, unhappily frustrated by the war, invariably earned him compliments. Another abiding interest of his was the Science Committee and in particular the award of Association prizes. The special committees of the Association to which Gordon was appointed almost as a matter of course would make a long list. In 1926 he was a member of that famous committee which for two or three years wrestled with the problem of psychoanalysis, heard much evidence, and produced a report. Other committees included those concerned with medical education, mental deficiency, lunacy law and mental disorder, the care of the elderly and infirm, medical aspects of abortion, research into the causes and treatment of arthritis, and the *Charter for Health*. One of his last pieces of service was on Sir Henry Cohen's committee on general practice and the training of the general practitioner. For the last five years he had been a member of the joint committee on psychiatry and the law, which has produced already some valuable reports.

Active as Gordon was in many sides of the Association's work, nothing held his interest so strongly as the affairs of the *B.M.J.* He made it his business to understand the intricacies of publishing and printing. He encouraged the editorial staff to put forward constructive suggestions, and out of the to-and-fro of discussion in a special subcommittee set up to consider methods of improving the *Journal* came a series of reforms the fruits of which are still being gathered. It cannot be denied that when Gordon became chairman of the Journal Committee in 1934 the *Journal* had an old-fashioned look, with its sham Gothic titling on the cover. The opinion of experts was sought, and the Journal Committee was soon fortunate enough to receive the help and advice of Mr. Stanley Morison, who undertook a complete typographical reform of the *Journal*, which assumed its "new look" in the first issue of January, 1937, with a device on the cover designed by Mr. Eric Gill. These typographical reforms were linked with a change in the printing of the *Journal*. Up to January, 1937, the typesetting of the *Journal* had been done in B.M.A. House and the machining by a firm of printers elsewhere in London. As it was thought to be more efficient and economical to have both operations done under the same roof, the composing room in B.M.A. House was dismantled, and the whole job undertaken by Messrs. Eyre and Spottiswoode until the destruction of their plant in May, 1941. While these major reforms were being presented in various stages of development to the Journal Committee and the Council, an inquiry was made into the efficiency of the business management of the *Journal*. As a result, the functions of advertising, publishing, and accounting were clearly defined, and new appointments were made. Gordon threw himself heart and soul into all this work. He did not hesitate to seek advice from anyone able to give it, and once he had convinced himself that a certain line of action was the right one to take he pressed forward with all his considerable energies. It was his mastery of the case and his capacity for clear and persuasive exposition in committee and Council that made it possible to introduce in the period 1934–7 far-reaching reforms in the printing and business management of the *Journal*.

He married in 1913 Miss Agnes Theodora Henderson, and had two sons, one of whom, Dr. Ian Ronald Gordon, is in practice in Bath.

N. G. H. writes: As a friend and close associate for 27 years I would like to pay brief tribute to the character of Ronald Gordon, whose gifts of mind and heart I have long admired. The unforgettable Bath Meeting of 1925 was planned and made by four men: F. G. Thomson, W. G. Mumford, R. G. Gordon, and John Hatton. Thenceforward and for a long time Gordon became an increasing influence in the Association and its *Journal*. His devotion and tireless energy were recognized by those around him, and they marvelled at his capacity for combining this work with self-effacing labour in so many other fields; no detail was too small and no issue too large for mastery. We who knew something of the courage and steadfastness of this "slave of duty" could best appreciate his moments of gaiety and relaxation from care. He did much for the *Journal*, mostly behind the scenes, and it is here that he would have wished to be remembered, as one of those who helped.

Mr. R. Scott Stevenson writes: I first met Ronald Gordon so long ago as 1906, when he came up to Edinburgh University from Broughty Ferry, by way of Charterhouse. Alumni of that famous English foundation were rare birds at Edinburgh, and Gordon, tall and good-looking, with a surprisingly mild, high voice, maintained a somewhat

aloof air and mixed little with his fellows, partly because he was taking a science degree combined with his medical course, so that his days and nights were fully occupied. Among his few recreations were the discussions at the Royal Medical Society, of which, when a resident at the Royal Infirmary, he became Senior President. He graduated B.Sc. with distinction in zoology in 1909 and M.B., Ch.B. with honours in 1911. Gordon was one of the half-dozen leading graduates of his year, and his friends expected him to stay on and become a consulting physician at Edinburgh, where he would undoubtedly have made his mark as a teacher. But after having been house-physician to Sir Byrom Bramwell, a much sought-after resident post that gave Gordon a permanent bias towards neurology, he followed other Edinburgh graduates as house-physician to Dr. George Sutherland at Paddington Green Children's Hospital, and then, in 1913, made up his mind to settle down in practice at Bath. His career, like that of so many of his contemporaries, was profoundly affected by the two world wars : the war of 1914–18 found Ronald Gordon as a captain, R.A.M.C., in France and at Salonika, while later on, in the war of 1939–45 he was a colonel, A.M.S., in command of a hospital, at first in his own city of Bath, but later in West Africa. The list of his publications shows his wide interests in medicine—perhaps his professional reputation might have been even higher if his interests had been somewhat narrower—for he was not only a leading spa physician, a consultant in rheumatic diseases, but also a consultant in paediatrics and—probably nearest his heart—in neurology and psychology. I picked up intimate contact with him again in 1925, when the B.M.A. met at Bath. Gordon, by the accident of someone else's illness, became honorary secretary to the Annual Meeting. He made a great impression upon the then hierarchy of the B.M.A., and was persuaded to begin to take an interest in medico-political affairs. He was ambitious, but he was also industrious, and he took his full share of the less spectacular work of the Association. He always got up his brief thoroughly before he made a speech, and when in the chair in committee invariably had the agenda and the business of the meeting at his finger-tips. The *British Medical Journal* of to-day owes much to Gordon, for it was he, along with Professor R. J. A. Berry, and (if I may be permitted to say it) Dr. Hugh Clegg, who did much to lay the foundations of the complete reorganization that took place in 1936. It took all the arts of the diplomat, which Gordon possessed in full degree, to get the radical changes through the Council and approved by the Representative Body, and in the board of directors which was set up Gordon was (as I can aver from personal knowledge) the dominating figure. At this period he was sometimes up and down to London from Bath several times in a week, and the welfare of the *Journal* filled his thoughts day and night. Gordon knew exactly what he wanted, and accepted and supported the view that the *Journal* ought to be primarily an independent scientific journal and only secondarily the medico-political organ of the Association—a view that was not always universally popular ; but the present unprecedented prosperity of the *Journal* speaks for itself, and is—at least in substantial degree—a permanent memorial to Gordon's sagacity and perspicacity.

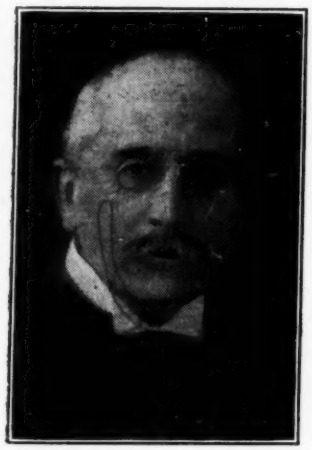
Professor R. J. A. Berry writes: A distinguished fellow citizen of the late Dr. Gordon has remarked that one of the major tragedies of the war has been the dislocation of friendships. If to this be added those other dislocations consequent on the ravages of anno domini, compulsory retirements, and such like, a sufficient explanation is afforded of why two men who in the 1930's were so closely allied professionally, clinically, socially, and "British Medically" as were Gordon and myself became so completely "dislocated" in the 1940's. Incidentally there was also Gordon's war service overseas. In the period referred to there could have been few who knew Gordon as intimately as I did. He was a man of many parts and of a diversity of interests, a staunch supporter of his friends, and an almost rabid adherent of the British Medical Association. It was Gordon who, in those happy days when we were both members of the Journal Committee and of the board of directors, carried through the reform of the printing of the *Journal* and of its business management. How successful that policy has been there are doubtless those in both the editorial and finance departments of the Association who could to-day bear witness. It was not in Council or committee that one got to know the real man that was Gordon. In my case there were also those many, many journeys between Paddington and the West of England, and here it was that the sincerity of Gordon's devotion to the Association made itself so apparent. The Association has much to thank him for and his friends have even more. Of his many contributions to science and to the *Journal* others may speak : for me it only remains to say that saddest of all words—*Vale*.

Dr. Henry Robinson writes : My outstanding memory of Gordon during 10 years of association with him on the Journal Board (now the Publishing Subcommittee) and the committee of investigation which preceded it is of the prodigious amount of work which he got through : the only other man in our profession whom I have known to drive himself to the same degree was the late Cecil Joll—and neither of them has reached old age. Gordon's high achievements in general medicine and in psychiatry would have taken up all the time of most men ; how he found leisure to compile reports of special B.M.A. committees and in addition to work as he did for the *Journal* was always difficult to understand. As for the latter, which was very near to his heart, he was the leader and the moving spirit of the team which in 1935 and 1936 set out to transform the production of the *Journal*. Nothing escaped him—typography, paper, printing, advertisements, staffing, finances, salaries, administrative details of a hundred-and-one kinds : he had them all at his fingertips. With the willing co-operation of the then Editor, Dr. N. G. Horner, he reorganized the production so completely that little has since been needed except to carry on his reforms. As chairman for many years of the Journal Committee he always impressed the Council by his intimate knowledge of every facet of medical journalism. As the phrase goes, he "knew all the answers," though as a debater he had his limitations. One thing no one could miss—his complete honesty and enthusiasm and the tremendous energy he threw into the work of his committee. After his subcommittee in 1936 had found that a better quality of paper for the *B.M.J.* could be obtained, at a saving of £2,200 a year on the existing arrangement, he made a journey to the mills, remote from London, where the new paper was produced in order to see for himself the processes involved. This meant an absence of one more day from his practice. How much he sacrificed through his devotion to the Association no one will ever know, but it must have been a very large sum. As a rule I am rather sceptical when I read of men killing themselves by overwork ; but in Gordon's case I am willing to believe that he really did shorten his life.

E. W. HOPE, O.B.E., M.D., D.Sc.

Dr. Edward William Hope, who was for thirty years medical officer of health for Liverpool, died at his home in Caldy, Cheshire, on April 27, at the age of 95.

Born on August 8, 1856, Hope was a student at the University of Edinburgh. He graduated M.B., C.M. in 1878, proceeding M.D. in 1881, and he took the D.Sc. in Public Health in 1887. He became a member of the staff of the Liverpool Public Health Department in 1883, and was appointed medical officer of health in 1894, following in the footsteps of Duncan, the first medical officer of health in this country, French, and Stopford Taylor. He recognized at the time that he was succeeding to an anxious inheritance. The Liverpool of the 'nineties, with its large mixed population, mainly earning its living by ill-paid casual labour in connexion with the docks, its extraordinarily bad and insanitary housing, and its high death rates, presented to the medical officer of health a task of quite exceptional difficulty. From the start Hope tackled his new responsibilities with the energy and determination which were to prove characteristic features of his administration for the next thirty years. Dealing with slum clearance as a fundamental health problem, he succeeded during his tenure of office in having demolished 12,000 insanitary houses, mainly situated in courts, and by so doing he removed from Liverpool for ever the reproach of being "the black spot on the Mersey."



Elliott and Fry

His great opportunity, and one which was to earn him a place as one of the pioneers in public health, came with the inauguration of the personal health services. It was at his insistence that the council appointed in 1897 the first of the many health visitors later employed in Liverpool, and he was one of the earliest in the country to open a milk depot and to establish child-welfare clinics. In the later years of his tenure of office Hope initiated a tuberculosis service and a system of venereal diseases clinics, and, not forgetting sanitation in the excitements of the new outlook on public health, he continued with the task of slum clearance. His outlook was always a forward one, and he did not hesitate when necessary to challenge the views of the medical advisers to the Local Government Board. An instance of this came after the smallpox outbreak in 1901–3, when he officially criticized the current beliefs of the Central Department about the spread of this disease by aerial convection.

Hope was not only a prominent public health administrator, but he was also strongly attracted by the academic side of his subject. For many years he was Professor of Public Health at the University, and he was greatly interested in the training of sanitary inspectors and health visitors, realizing that the efficiency of his department depended so much on these officers. In order to improve training facilities for sanitary inspectors and health visitors he organized the Liverpool School of Hygiene, and it was owing to his devoted efforts that the present building in Mount Pleasant was erected, to serve as a headquarters for the many courses of instruction conducted under his supervision. His literary output was considerable. Early in the century he realized the need for an authoritative book on his subject, and his *Textbook of Public Health*, which has run into many editions and still appears under another name, was first published at that time. With two of his colleagues he compiled a book on industrial hygiene, and after his retirement from office in 1924 he wrote *Health at the Gateway : Problems and International Obligations of a Seaport City*.

The writer, one of Hope's two successors in office, has many happy recollections of him. It was pleasant to be referred to as "my official grandson" and to receive in letter form from him, two or three times a year for many years, his criticisms, often acid but always well informed, of some current piece of public health legislation. He was fortunate in possessing an exceptionally happy home, and in his later years, having long passed the Psalmist's allotted span, that "his eye was not dim, nor his natural force abated." He was president of the Society of Medical Officers of Health in 1912–13, and held the same office in the Liverpool Medical Institution. He was also president of the Section of State Medicine at the Annual Meeting of the B.M.A. in 1913. Only a few months ago Professor Hope was being congratulated on an unusual record—he had been a member of the B.M.A. for seventy years. He was awarded the O.B.E. in 1918. Hope married C. Rennie, daughter of John Bowring, of Liverpool, who survives him with a son and two daughters.—W. M. F.

A. B. APPLETON, M.D.

Professor Arthur B. Appleton, Emeritus Professor of Anatomy in the University of London, died at St. Thomas's Hospital on April 22, on the eve of his sixty-second birthday.

Arthur Beeny Appleton was the only son of the late Arthur J. Appleton, of Earls Colne, Essex, and was educated at the City of London School, Downing College, Cambridge, and St. Bartholomew's Hospital, where he was a scholar. He graduated B.A. in 1910, and went on to the M.A. in 1913. In 1914 he took the conjoint diploma, and during the 1914–18 war he served in the R.A.M.C., first in France and later in Macedonia. Returning to Cambridge after the war, Appleton decided to specialize in anatomy. He joined the staff of the anatomy department in 1919, graduated M.B. in 1920, proceeding M.D. in 1922. He was awarded (jointly) the Raymond Horton-Smith Prize for his M.D. thesis, and the Symington Prize for anatomical research in 1923. From 1926 he was lecturer in anatomy in the University of Cambridge, a position which he held until his appointment in 1934 as professor of anatomy in the University of London, at St. Thomas's Hospital Medical School. From 1930 to 1934 Appleton was a Fellow of Downing College, Cambridge. In addition to his professorship in the University of London he was professor of anatomy at the Royal Academy of Arts, and during 1944 a Hunterian professor of the Royal College of Surgeons.

Professor Appleton wrote extensively on anatomy, morphology, and embryology. His earlier investigations were concerned with the morphology of the musculature in the Tetrapoda. For a number of years he was particularly interested in the distribution of the bronchial tree and had made a number of valuable contributions on this subject. These were published in the *Journal of Anatomy*, *St. Thomas's Gazette*, and in other journals. He was the author of a *Guide to Vertebrate Dissection for Students*, which was published in 1929, and in collaboration with W. J. Hamilton and I. C. C. Tchaperoff he was responsible in 1938 for *Surface and Radiological Anatomy*, of which the last edition appeared as recently as 1949. He also revised the chapter on the ductless glands in the seventh and eighth editions of *Cunningham's Anatomy*. When he

retired from the university chair in 1948 on reaching the age limit Professor Appleton did not give up his scientific pursuits. He was appointed to the staff of the new Institute of Animal Physiology which the Agricultural Research Council is now developing at Babraham, Cambridge. In this new field of work he had mapped out an extensive programme of research on the surgical anatomy of farm animals. Unfortunately, before he had time to complete the first part of this work he was stricken by an illness which could have only one outcome. Though he knew this, he faced the end with great courage and the equanimity which was so characteristic of him.

Professor Appleton was especially interested in the teaching of the anatomy of the living subject. By the use of radiology and the time-honoured method of physical examination he encouraged his students to study living anatomy concurrently with their dissection. He took an active interest in physical education, and was for a time a member of the advisory committee to the University of London on the Diploma of Physical Education. He was also University representative on the governing body of Chelsea College. It was particularly gratifying to him to be elected president of the Anatomical Society of Great Britain and Ireland in 1947. When his tenure of that office expired in November, 1949, he felt it keenly that, owing to his illness, he was unable to attend the meeting to install his successor. He had been chairman of the Board of Studies in Anatomy and chairman of the Intermediate Medical Board of the University, and he was also a member of the Academic Council from 1942 to 1947. He was at different times an examiner for the Universities of London, Liverpool, Manchester, Cardiff, and Cambridge, and for the Chartered Society of Physiotherapy. He was vice-president of the Section of Anatomy at the Annual Meeting of the B.M.A. in 1936. In addition to being a member of the Anatomical Society, he was a member of the Physiological Society, the Society for Experimental Biology, the Association des Anatomistes, and the Association for the Study of Diseases of the Chest.

Professor Appleton's hobbies were music and art; in his youth he was a pianist of exceptional ability. He derived great pleasure from walking in the countryside. To his widow, his son, and his daughter the sympathy of many colleagues and friends will be extended.

WARWICK DEEPING, M.B.

Warwick Deeping, who died on April 20 at Weybridge at the age of 72, was so well known as a novelist that probably only a few of his readers realized that he was a member of the medical profession who had at one time been in active practice.

George Warwick Deeping was born at Southend, Essex, the son of the late Mr. G. D. Deeping, J.P., and his wife, Marianna Warwick. He was educated at Merchant Taylors' School and Trinity College, Cambridge, qualifying from the medical school of the Middlesex Hospital and graduating M.A. and M.B. in 1902. At Cambridge he attracted notice as a writer of verse much above undergraduate standards. None of his contemporaries there was surprised when after practising his chosen profession for a year he abandoned it for literature, except that he returned to harness by joining the R.A.M.C. for the 1914–18 war. He served in Gallipoli, Egypt, and France, and reached the rank of major. His early novels were well received by the critics as well as by the public and were deservedly popular. It was not until 1925, however, that he produced a "best seller" in *Sorrell and Son*. Another success followed in 1928 with *Old Pybus*. These two books assured him a faithful following of readers who eagerly bought everything he wrote. It would be idle to class him with Galsworthy or Bennett, to mention two of his contemporaries, but he was, without doubt, more than just an accomplished story-teller. Warwick Deeping was an author who always aimed at high standards, and he was a stylist as well as a popular novelist, two things that do not always go together. If sometimes he was more of a sentimentalist than the sternest critics could approve, then so was Barrie. His wide range was shown when he laid the scene of one of his romances in Calleva Atrebatum (Silchester) not long after the Romans had evacuated Britain. Other novels, too, had historical settings, though usually his plots dealt with contemporary manners and events. His output was very large—more than 50 novels in all—and he was unquestionably a really skilled craftsman who gave pleasure to a very wide circle of readers.

Medical Notes in Parliament

QUALITY OF FLOUR

In the House of Lords on April 20 LORD HAWKE called attention to the unsatisfactory quality of flour used for making bread. He said it produced a dirty-coloured bread with bad keeping qualities. Its taste was not good, it was indigestible and it required adulteration for technical reasons. The reason for all this was that the extraction rate was too high. If man depended entirely on bread then that bread should be made of flour of a high extraction rate, but if he had a more generous diet he could afford to have a lower extraction rate. Lord Horder had written in 1945, "Take care of the mixed diet and the vitamins will take care of themselves." Before the war Britain had an extraction rate of 70 to 72%, producing a white bread that was acceptable to the people. In March, 1942, the rate was put up to 85%. In December, 1944, it was reduced to 80% as a result of improved milling technique. In 1945 a strong committee, of which Lord Horder was a member, considered the question of the post-war loaf. It recommended an 80% extraction rate which, owing to advances in the technique of milling, would attract into the flour elements which previously required a higher rate. The committee further considered that a lower extraction rate would be nutritionally satisfactory provided the flour was fortified with vitamins and so on. Medical members of the committee were not prepared to recommend a fortified flour without further experience and experiments.

In May, 1946, the extraction rate was put up to 90%, but in September of that year it was reduced to 85% and had remained at that level ever since. With the higher extraction rate more phytic acid was found in the flour, and to offset this it was necessary to put into the bread some chalk-like substance. In spite of the assurances of science, those people who suffered from diseases which formed a deposit of chalk in various parts of their anatomy did not view with great delight the presence of chalk in their bread. The time had come when the nation ought to revert to an 80% extraction rate and go on to consider a lower rate in the light of experiments in regard to fortification. From a reduction in the extraction rate they would get better colour, better keeping power, better taste, greater digestibility, and a lighter loaf with less chalk added.

Lord DE LA WARR said that with a 72% extraction rate the country could produce 215,000 tons more bacon per year or 310 million dozen eggs. That meant virtually doubling the present ration of bacon or eggs.

Lord PALMER, the senior director of a firm of biscuit makers while pleading for an improvement in the palatability of bread, held that a similar case could be made out for biscuits. The Ministry of Food provided the biscuit manufacturers with 72% extraction flour for the overseas trade, because with an 85% extraction flour it would be impossible to compete with biscuits made overseas. Flour of 85% extraction deteriorated in storage and its baking power was erratic. In storage the biscuit also acquired a musty flavour and was thoroughly unsatisfactory.

Medical Views

Lord HORDER said he had always tried to approach this subject in an unbiased and objective manner. There should be made available for every citizen the best bread that modern milling and baking could produce, containing the maximum amount of nutrients compatible with acceptability in taste, colour, texture, and digestibility. During the war medical men came to the conclusion that provided a patient could eat bread at all he could eat and digest the 85% extraction loaf as well as the pre-war loaf. If bread was acceptable, less was wasted. Any quality in the loaf which induced the nation to eat more bread, provided this quality was not attained at the sacrifice of essential nutrients, was to be encouraged. The idea that bread was just a starchy food was a fallacy. Bread was a good source of protein as well as of other essential nutrients. Millions of people in this country depended on it as their main source of nutrition.

In 1945 he had pleaded for a specification in regard to the national loaf so that the public could be assured that the nutritional value of the loaf was adequate. That idea had been acted upon. The then Minister of Food set up an interdepartmental committee, with Sir Henry French in the chair. The main conclusion at that conference was that regulations should provide that flour contained minimum amounts of three token nutrients: vitamin B_1, nicotinic acid, and iron. These could be analysed and a definite specification of the nutritional value of any bread could be determined. The conference considered the relative value of the low extraction rate with enrichment as against a high extraction rate without enrichment. No decision was reached, because at that time knowledge of those matters was inadequate. He suggested that the conference should be convened again to review the knowledge which had accumulated in the meantime.

The level of extraction recommended by the original conference was 80%. Because of world food conditions the extraction rate subsequently went up to 85% and even 90%, but now the point was whether Parliament should not implement the recommendations of that committee and pass to 80%, which gave a more acceptable loaf and adequate nutritional value.

Lord TEVIOT said that in his opinion the phytic acid in bread was only infinitesimal and would not affect anyone. He himself was eating home-made loaves of 100% extraction flour. Such a loaf was excellent when over a week old, but if placed for a night in a tin with a loaf such as the ordinary consumer ate it became mouldy. If they looked at what had happened in the last few years they saw the danger in our present bread. Sir Edward Mellanby had discovered the presence of agene in bread. The Americans and ourselves had now cut this out of their bread, but year after year they had been eating bread in which there was this definite poison. They should make a thorough research into the extraction and making of bread.

Lord HANKEY believed that on the whole the health of the people was good. Lord Horder had sent him a report by a committee of the British Medical Association which had sat under his chairmanship for over two years. This said it appeared that the health of the population as a whole had been well maintained despite the trials of recent years. Among the causes of good health the committee mentioned the raising of the extraction rate of bread and its fortification with calcium. It would seem that an 85% extraction was definitely better than 80%. The so-called 80% flour did not make 80% bread, because it was mixed with imported flour.

The debate was resumed on April 25. Lord SEMPLE said the House now knew the truth about the spurious claim that lower extraction flour or bread kept better than higher extraction flour or bread. The real reason for this was that it had been chemically bleached. The ideal loaf was made of compost-grown, stone-ground, 100% extraction flour.

Lord LLEWELLIN said that the consumers preferred the whiter bread. The extraction rate was now enforced by Order in Council and so long as that Order was in existence the consumer could not get bread of a lesser extraction rate than 85%. He recalled that during the war the Board of Admiralty had always resisted the request of the Minister of Food to adopt 85% extraction bread. The Board said that the higher extraction rate bread did not keep. He had not noticed that the health of the Navy deteriorated in contrast with the rest of the population who had 85% extraction bread. Bakeries, whether large or small, preferred the lower extraction rate. The only animals who utilized fully the husky parts of wheat were the pig population. During the war, when he was Minister of Food, the Government had been convinced that with the new methods invented of grinding wheat sufficient nutritional qualities were left with the 80% extraction rate. There was as much vitamin B_1, nicotinic acid, and iron as was necessary. The difference in iron content between 85% and 80% extraction rates was the difference between 6.8 and 6.1 mg.—according to the admirable report of the B.M.A. committee.

During the war a new milling technique had been evolved in the Cereals Research Station at St. Albans which enabled more of the germ to get into the final flour. As the flour industry was under the control of the Government on a fixed remuneration basis it made no difference at present to the millers whether they ground 80 or 85% extraction rates. He did not know what prevented an alteration in the extraction rate, but he suspected that the Government would say something about the shortage of dollars.

Government Reply

Lord ALEXANDER, replying to the debate, said during the war he had found when visiting naval depots that nearly all the larger ships were much in favour of the 72% extraction, but in small ships which took their bread from depots the wartime loaf stood up very well indeed. From his own knowledge of the baking industry he believed a case could be made out for reverting to the 80% extraction, but once that was reached they must keep in mind that there would be a further demand for a 72% extraction. They must consider whether they could buy the extra wheat needed to alter the quality of the flour by lowering the extraction. It was likely that a high proportion of the charge would be in dollars and that the milling offals made available would be dearer than imported feeding stuffs. It had not yet been possible to decide what should be the permanent post-war extraction rate. The whole matter was under review and the Minister of Food would give consideration to Lord Horder's suggestion for reconvening the conference on the post-war loaf. The Government's nutritional advisers thought that the high extraction rate of 85 or 90% might well be one of the contributory factors in the improvement in the statistics of the nation's health. With the increased supplies of food now becoming available it might be possible to reduce the extraction rate without lowering the average nutritional intake. Mr. Webb would watch all these factors. He added that the Government could hold out no promises in this matter because it had to be bound by the facts of the economic situation, but within those limits Mr. Webb would wish to give weight to his remark that "a little of what you fancy does you good."

R.A.M.C. Problems

In the House of Lords on April 19 Lord RIDGEMAN called attention to Army problems. Lord LUCAN, replying for the Government, said negotiations were going on with the Ministry of Health for the recognition of skilled categories of the Royal Army Medical Corps personnel under the National Health Service Act.

Lord WEBB-JOHNSON said he was chairman of the Army Medical Advisory Board and had a special responsibility for the efficiency of the R.A.M.C. Lord Alexander, in the debate on defence, had promised that points raised in that debate would be answered during the present one. Lord Webb-Johnson said he had then pointed out that the problem of supplying specialists to the Army was likely to be overcome only by integration of the Army Medical Service with the National Health Service, and by seconding doctors in the latter service into the armed Forces. He said it was unfortunate that since that proposal was put forward many posts had been filled without any such obligation of secondment. The real problem facing the Royal Army Medical Corps was

fundamentally the efficiency and strength of the regular officers and men. To bring that strength up to establishment was becoming more difficult, and by reason of retirements under the age limits the officers were becoming fewer. Many younger officers remained in the corps only because there was a ban on retirement. When that ban was lifted the true situation would be revealed, but the present situation was serious enough.

The establishment of R.A.M.C. officers was 915, including long-term and short-term commissions; the deficiency was 342. The deficiency in long-term officers was 10%; for short-term commissions it was 64%; and the overall deficiency was 37%. The R.A.M.C. was in danger unless drastic steps were taken to remedy the situation. The only remedy was improvement of terms and conditions of service. It was comparatively easy to determine how remuneration in the civilian National Health Service and remuneration in the Royal Army Medical Corps could be made reasonably comparable.

Lord PAKENHAM, for the Government, regretted that he had not yet anything definite to report on the issue which Lord Webb-Johnson had raised. The matter was regarded as of real urgency and was past the stage of being examined. He was not ready to make any pronouncement, but he would be disappointed if Lord Webb-Johnson's remarks did not play their part in producing a helpful result. He agreed that the whole question of the Royal Army Medical Corps should have the highest priority.

The debate then concluded.

HOSPITAL ENDOWMENTS

Sir JOHN MELLOR on April 19 moved that the regulations entitled "The National Health Service (Hospital Endowments Fund—Discharge of Liabilities) Regulations, 1950," be annulled.

He said the regulations were made in perfect pursuance of Section 7 of the National Health Service Act, 1946. That section provided that regulations should enable the Minister to apply, to such an extent as might be prescribed, the assets of the Fund for discharging any liability transferred to him in connexion with the transfer of voluntary hospitals other than teaching hospitals. Last month the Minister had made regulations which provided for this kind of transfer, but left securities of not less than £20m. in the Fund to form the net capital sum within the meaning of the National Health Service (Apportionment of Hospital Endowment Fund) Regulations, 1949.

Sir John said that the new regulations, although they prescribed a certain minimum residue to remain in the Fund, did not define the extent of the liabilities which the Minister might discharge out of the Fund. The Minister of Health was asking the House to give him a blank cheque upon the Fund. Regulations made last year about the apportionment of the net capital sum, that was to say, the residue of the Hospital Endowments Fund after proper discharge of the liabilities, provided that this net sum should be divided into halves. One-half was to be divided among regional hospital boards in proportion to the number of beds for which they were responsible. The other half was to be divided among hospital management committees, also in proportion to the number of their beds.

In the Second Reading debate on the National Health Bill, the Minister of Health had told the House that something like £32m. belonging to voluntary hospitals was not going to be taken from them. It would be used as a shock-absorber between the Treasury, the central Government, and the hospital administration. That administration would be given it as free money which could be spent over and above the funds provided by the State. Up to the present the accounts of the Hospitals Endowments Fund had not been published. In the absence of these accounts it was difficult to see how the House could allow these regulations to go through. The regulations provided that securities of the value of not less than £20m. should be left in the Fund, but also that the values of securities left in the Fund should be taken as their current market value at July 5, 1948. When asked about this, Mr. Bevan had said that the provisions for the discharge of liabilities took effect on July 5, 1948, but the regulations under discussion now provided for the discharge of liabilities out of the Fund, and therefore the effective date was not July 5, 1948, but the date of the making of the order now under consideration.

Since July, 1948, there had been heavy depreciation in many securities, and it might well prove that £1m. or more might have been knocked off the value of the Fund since that date. The House ought to be informed of the present value of the Fund and the amount of the liabilities taken over by the Minister in connexion with the voluntary hospitals. He asked for the latter information to be divided into two parts, first the liabilities attaching to the endowments themselves; and secondly the liabilities attaching to the hospital premises. While it was reasonable that Mr. Bevan should discharge in full out of the Fund the liabilities attaching to the endowments, he ought not to discharge out of the Fund the liabilities attaching to hospital premises which he had taken over.

Mr. DAVID RENTON seconded the motion that the regulations be annulled.

Mr. LINSTEAD pointed out that the 1946 Act laid it down that in the case of any endowment transferred to the Minister and the Hospital Endowments Fund the Minister should secure that the objects of the endowment and the observance of any conditions attaching thereto were, so far as was reasonably practicable, not prejudiced. He assumed that the income from the Fund was about £60,000 a year. There were 500 hospital management committees in the country, which would get about £100 each as their share of the Hospital Endowments Fund. Did the Parliamentary Secretary to the Ministry of Health believe that £100 a year would allow these voluntary hospitals adequately to secure that the objects of the endowments and the observance of any condition attached thereto were preserved? Mr. Linstead pointed out that the Minister had used £10m. to liquidate the liabilities of the voluntary hospitals. The House ought to know whether he had in fact liquidated the liabilities with that money, or whether they were being met from the general vote of the Minister.

Government Reply

Mr. BLENKINSOP, replying for the Minister of Health, said it was clear there was some misunderstanding. It was true that the sequence of events in the orders was unusual, and it was a pity that the Government had not been able to present to the House the accounts for which the Act provided. The first of these accounts would be presented very shortly. The date of July 5, 1948, was operative for the assessment of both liabilities and assets. The Government could not take different dates for them. The regulations presented to, and passed by, the House a year ago ought to have followed the regulations now under discussion. The explanation was that the other regulations had been presented last year to enable an interim distribution to be made, so that funds should be available to fructify in the hands of regional hospital boards and hospital management committees. That was a proper thing to do, although it was not possible to define accurately the total size of the Fund, or the total size of the liabilities to be taken over. Even now the Ministry had not completed the transfer of assets. It had dealt with many thousands of separate endowments and the matter had proved complex.

The Ministry was now in a position to estimate closely what total liabilities it would have to meet and could also estimate fairly accurately the total value of the assets that would be transferred into the Fund. Certain of the liabilities had been discharged by the Exchequer, and the Ministry had presented the present regulations because it wished to reimburse the Exchequer. It was now possible to state with reasonable accuracy that the sum available after payment of liabilities would be not less than £20m., although some assets had not yet been transferred. Among cases which came to mind was that of the Papworth Settlement.

The report on the Hospital Endowments Fund for the period ended March 31, 1949, would very soon be laid before the House, and the report for the year ended March 31, 1950, would be presented near the end of the year. Hospital management committees on which the Government had to rely for the bulk of the information had not been able to provide until the last few weeks final figures for the period ended March 31,

1949. It could be well understood how difficult it was for these committees to complete the details which had to be made available to the Ministry.

They were now able to say that the gross value of the Fund should be approximately £30m., and that approximately £11m. would be required to meet liabilities. That £11m. included more than £6m. for bank overdrafts. The figure of £30m. was based on the 1948 values. There were sums owing to hospitals as at July 5, 1948. The Government thought it would have a minimum figure of £20m. for distribution to regional hospital boards and hospital management committees, and that there was no danger of that figure being diminished. He hoped that Sir John Mellor would withdraw his motion.

Commander GALBRAITH said that what was really happening was that the money was being used to discharge liabilities which had accrued to the hospitals generally and which really had little or no connexion with the endowments of the non-teaching voluntary hospitals. It seemed that the House had to be content with Mr. Blenkinsop's explanation, but he hoped that a full account would be rendered in the near future. The House had received no account of the manner in which the Fund had been used for two and a half years.

Dr. CHARLES HILL asked Mr. Blenkinsop to explain the proviso that securities of not less than £20m. must be left in the Fund. The Minister had an obligation to discharge these liabilities, and it was difficult to see why this proviso was attached. If he knew the size of the liabilities and knew that £20m. would be left there was no need for the proviso. If he did not know, then the proviso would seem to impede the Minister in discharging the function of meeting the liabilities.

Mr. BLENKINSOP said the Ministry had taken this figure, being satisfied that the money left in the Fund would not drop below it, but it was possible that the liabilities or assets might differ slightly from the estimated figures.

Dr. HILL said that a guarantee that not less than £20m. should be left at the end seemed to him to qualify the Minister's obligation to meet the debts.

Mr. HENRY STRAUSS did not think that Mr. Blenkinsop had in any way qualified his obligations to discharge the debts. If he could not use these particular assets for the purpose, that did not mean that he would escape any part of his liability.

Sir John Mellor's motion to annul the Address was then negatived.

Pharmaceutical Services

Mr. LINSTEAD on April 20 moved to annul the National Health Service (General Medical and Pharmaceutical Services) (Amendment No. 2) Regulations, 1949, which had been laid before Parliament on December 16. He drew attention to two paragraphs. One dealt with the advertising of the pharmaceutical services, and the other dealt with the new system of prescribing under the National Health Service Act. He said both these regulations involved matters of principle.

Regulation 11 provided a new method of prescribing medicines which permitted a doctor who was responsible for the medical care of the inmates in an institution to write prescriptions for stocks of drugs and medicines, instead of writing prescriptions for individual patients. Mr. Linstead said this was a complete departure from the principle of a medical service. The intention had been to meet a complaint that it might be wasteful for a doctor in boarding schools and places of that kind to prescribe a series of individual bottles of medicine when a group of patients in the sanatorium all suffered from the same illness. The regulations did not do that. They said that every time a school doctor or a doctor attending a National Assistance Institution wrote one of these bulk prescriptions he had to enter the name of the school or institution and the number of persons residing therein for whose treatments he was responsible. It was a new departure of building up stocks in a sanatorium or in the sick-room of an institution. Mr. Linstead asked why factory proprietors should be expected to pay for the medicines which they provided, whereas the governors of a boarding-school should be given free medicines to stock in their medicine cupboards.

The other point which he raised related to a provision in the regulations dealing with advertising of pharmaceutical services in chemists' shops. He would have thought that the Minister of Health would desire to extend to the optical and pharmaceutical services the prohibition of advertising which applied to doctors and dentists. The Minister had settled a standard form of notice which the optician might display, but in the pharmaceutical service he had gone beyond that, and had permitted competitive advertising among different chemists, ignoring the advice given him by the professional body responsible for discipline among chemists. He had acted against the views held by his own Department. If he had left it to the professional body to prescribe the methods of advertising he would have been on firmer ground.

Sir HUGH LUCAS-TOOTH seconded the motion.

Mr. BLENKINSOP replied. He said it was true that in general the practitioners should prescribe individually for each patient. In practice the Ministry had found exceptional cases where this seemed wasteful, both of the doctor's time and that of the patients, as well as wasteful of medicine bottles and medicine. In the case of the boarding-school or some institution such as Dr. Barnardo's Homes it was stupid that the doctor had been expected under existing regulations to make out a separate prescription form for each patient suffering from exactly the same ailment. He had no doubt that sometimes doctors had got round the regulation by making out a prescription for a larger quantity than that required for one pupil. The Ministry thought it better to deal with the matter by amending the regulation. It would keep an eye on its operation.

Mr. LINSTEAD asked why the regulation required the total number of people in the institution to be stated on the prescription.

Mr. BLENKINSOP said that this was asked to prove that the doctor concerned had the requisite number on his list. The suggestion had been made to the Ministry by a number of doctors as well as by institutions. It seemed fair to the Ministry that the regulation should have a trial. If there was bound to be abuse of it, it could be amended. With regard to factories, the worker in the factory was still on the list of his own doctor near his home, and the Ministry had no desire to break that relationship. With regard to advertising by chemists, there were three points of view in the profession, and the Ministry, in view of representations made to it, had felt it was fair to follow a middle course by allowing a restricted form of advertising with approved wording. If there appeared to be any general abuse of the regulations, the Ministry would be willing to make amending regulations.

Mr. Linstead then withdrew his motion.

Smallpox in Glasgow

Full details of the outbreak of smallpox in Glasgow recently have been given in the "Epidemiological Notes" (April 1, p. 795; April 8, p. 853; April 15, p. 914). Questions about the outbreak were put in the House of Commons on April 25.

Mr. GAMMANS asked the Secretary of State for Scotland if he proposed to make any investigation into the circumstances in which members of the nursing staff of the Glasgow Isolation Hospital contracted smallpox; and when each of them was last vaccinated.

Mr. MCNEIL replied that the patient who was the primary source of infection was admitted to hospital suffering from pneumonia, and the eight nurses who contracted smallpox were direct contacts of this patient. From investigations already in hand he understood that of the three nurses who died none had been successfully vaccinated. The other five, all of whom were recovering, had been vaccinated more than once, the last occasion being some years ago. These nurses did not know that the patient they were nursing in the first stage was a smallpox contact. It did not seem to him obvious that when they were having difficulty in recruiting nurses they should impose on them a condition of compulsory vaccination which was not imposed on the rest of the community.

Replying to Mr. HENDERSON STEWART, who said that vaccinations were being carried out on a wide scale throughout Scotland, but that medical practitioners had not yet received any

payment for this work, Mr. MCNEIL said he was indebted to all medical practitioners who co-operated so zealously over the last few weeks. He was bound to point out, however, that vaccination was considered to be a normal part of good general practice, and so for general practitioners inside the National Health Service no special payment for these services was due. Negotiations were in progress, however, between the British Medical Association and the local authority associations to secure agreement on a fee to be payable by the authorities for reports from practitioners giving particulars of vaccinations and immunizations carried out.

Mr. RANKIN then asked whether all hospitals in Glasgow and the West of Scotland were notified of the presence of smallpox contacts in their areas during the recent outbreak: and why the late Dr. Janet Fleming, while suffering from a virulent form of smallpox, was admitted in the ordinary way as a patient to Hairmyres Hospital, Lanarkshire, and remained there for three days under observation, during which period responsible medical authorities had in their possession official notification that she was a smallpox contact.

Mr. MCNEIL replied that it was the function of the medical officers of health to keep all known smallpox contacts in their areas under observation, and they would at once notify any hospital to which such a person was removed. As an additional precaution every hospital throughout the West of Scotland was informed by the Western Regional Hospital Board immediately smallpox had been diagnosed in Knightswood Hospital, and they were asked to be on the lookout for possible secondary cases among new patients. Dr. Fleming was admitted to Hairmyres Hospital, suffering from a condition diagnosed as an acute abdominal one, on the morning of March 27 before anyone in Hamilton knew that she was a smallpox contact. As soon as it was known that she was a contact the hospital authorities made special clinical and laboratory examinations. This evidence was thought to exclude a diagnosis of smallpox. At a later stage, however, the development of her illness indicated that she was suffering from an unusual form of smallpox and she was at once removed to the smallpox hospital, where unfortunately she died.

Mr. MCNEIL also told Mr. WILLIAM REID that, while emphasizing the desirability of vaccination for staffs employed at fever hospitals or otherwise liable to come into contact with smallpox, Mr. Bevan and he did not feel justified under present circumstances in making vaccination an obligatory condition of service.

Mr. CARMICHAEL asked whether Mr. McNeil would examine the possibility of having all infectious diseases hospitals managed by the local authorities so that one authority would be responsible for the entire administrative duties necessary to combat and eliminate infectious diseases.

Mr. MCNEIL replied on this point that in the light of experience during the recent outbreak he was reviewing the arrangements for co-operation between hospitals and public health departments with particular reference to the control of infectious disease. He had, however, no reason to think that it was necessary to rearrange hospital services in the fashion suggested.

Petrol Tax and G.P.'s Remuneration

Dr. CHARLES HILL on May 2 asked the Minister of Health if he was aware that the increase in taxation on petrol would result in a reduction in the net remuneration of general practitioners in the National Health Service, whose State remuneration was gross and inclusive of practice expenses; and whether he would arrange for the appropriate addition to be made to the Central Pool for general practitioners' remuneration, so as to maintain the net remuneration at the level laid down by the Minister of Health.

Mr. BLENKINSOP in a written reply said, "I cannot regard the imposition of a new tax as constituting grounds for an addition to remuneration."

The Royal Sanitary Institute has accepted an invitation from the Corporation of Southport to hold the Health Congress in Southport in 1951 from April 23 to 27.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

In Congregation on April 22 the honorary degree of D.Sc. was conferred on William Shainline Middleton, President of the American College of Physicians and Dean of the Medical School of the University of Wisconsin.

The Council of the Senate has accepted the offer of the Trustees of the Nuffield Foundation to make a grant to the University of up to £5,000 for a survey of the incidence of rheumatic diseases in East Anglia to be carried out in the Department of Human Ecology.

Applications for the Marmaduke Sheild Scholarship in Human Anatomy should be sent to the First Assistant Registrary before May 20. The award will be made towards the end of June. Particulars of the scholarship were given in the *Cambridge University Reporter* dated April 26 (p. 1080).

The degrees of M.B., B.Chir. were conferred by proxy on F. B. Winfield and Violet L. Lutwyche in Congregation on April 22.

UNIVERSITY OF DURHAM

Dr. J. C. White will deliver the seventh Rutherford Morison Lecture at the Royal Victoria Infirmary, Newcastle-upon-Tyne, on Monday, May 8, at 5.15 p.m. His subject is "Surgical Relief of Intractable Pain." (*Change of date.*)

UNIVERSITY OF LONDON

Charles Granville Rob, M.Chir., F.R.C.S., has been appointed to the University Chair of Surgery, tenable at St. Mary's Hospital Medical School, from October 1.

The Fawcett Lecture on "Women in Medicine" will be delivered by Professor Winifred Cullis at the Bedford College for Women, Inner Circle, Regent's Park, London, N.W., on May 16, at 5.15 p.m.

A series of special guest lectures will be delivered at the Institute of Neurology, National Hospital, Queen Square, London, W.C., on May 18, 22, 23, 25, and 26 and June 1, 8, 13, 15, 22, 26, and 29, at 5 p.m. Details will be published in the "Societies and Lectures" column of the *Journal* week by week.

The Alex. Simpson-Smith Lecture for 1950 will be delivered by Professor Ph. Sandblom, of Stockholm, at the Hospital for Sick Children, Great Ormond Street, London, W.C., on May 25, at 5 p.m. His subject is "Factors Influencing the Rate of Wound Healing." Admission to this lecture is by ticket only, obtainable from the secretary of the Institute of Child Health at the hospital.

Professor Ernest Baldwin, professor of biochemistry, will deliver his inaugural lecture on "The Biochemical Approach to Biological Organization" at University College (Anatomy Theatre), Gower Street, W.C., on May 31, at 5.30 p.m.

Professor H. M. Evans, Morris Herztein professor of biology and director of the Institute of Experimental Biology in the University of California, will deliver two lectures on "Hormones of the Anterior Hypophysis" at St. Mary's Hospital Medical School, Paddington, London, W., on June 1 and 2, at 5 p.m.

The St. Cyres Lecture of the Institute of Cardiology, National Heart Hospital, will be delivered by Dr. Paul Wood at the Royal Society of Medicine (Barnes Hall), 1, Wimpole Street, London, W., on June 13, at 5 p.m.

The Galton Lecture in Eugenics will be delivered by Professor Sewall Wright, of the University of Chicago, at University College (Eugenics Theatre), Gower Street, W.C., on June 14, at 5 p.m.

A lecture on "Some Recent Studies of Porphyrin Metabolism and Porphyria" will be delivered by Professor C. J. Watson, of the University of Minnesota, at the London School of Hygiene and Tropical Medicine, Keppel Street, Gower Street, W.C., on June 27, at 5.30 p.m.

The following candidates at the London School of Hygiene and Tropical Medicine have been approved at the examination indicated:

ACADEMIC POSTGRADUATE CERTIFICATE IN PUBLIC HEALTH.—T. D Chablani, J. R. C. Tambimuttu.

The following candidates have been approved at the examination indicated:

ACADEMIC POSTGRADUATE DIPLOMA IN MEDICAL RADIOLOGY (THERAPY).—*Part I:* R. M. Cunningham, E. D. Jones, P. J. Pablot, Jean K. Ritchie.

UNIVERSITY OF WALES

WELSH NATIONAL SCHOOL OF MEDICINE

Professor F. Grundy, Mansel Talbot professor of preventive medicine, will deliver an inaugural lecture on "Disease Prevention—Past and Present" in the Reardon Smith lecture theatre, Park Place, Cardiff, on Thursday, May 18, at 8 p.m.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

H. G. Nelson, M.B., has been admitted to the Membership of the College.

The following candidates have been admitted Licentiates in Medicine and Midwifery, having passed the Final Examination in Medicine, Surgery, and Midwifery of the Conjoint Board of Ireland: P. J. Briggs, M. L. Brosnan, O. G. Corrigan, Ellen P. Doyle, D. P. Harris, Julianne Horgan, N. Hurley, A. Loftus, Anne M. Maguire, Margaret M. Murphy, Joyce M. McCall, P. J. McCormack, Alice T. McGlinchey, Sybil B. Orgel, M. F. Plunket, J. Vilensky, J. J. Walsh, Gladys I. Wilson.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

At a meeting of the Royal Faculty of Physicians and Surgeons of Glasgow held on April 3, with Dr. W. R. Snodgrass, President, in the chair, the following were admitted Fellows of Faculty *qua* Physician: B. R. Hillis, M.B., K. R. Mahajan, M.B., R. V. Rele, M.B., I. D. Riley, M.B., M.R.C.P., J. A. Simpson, M.B., G. A. Walker, M.B.

The following were admitted Fellows of Faculty *qua* Surgeon: R. R. Gilfillan, L.R.C.P.&S.Ed., J. H. Miller, M.B.

EPIDEMIOLOGICAL NOTES

Cholera in Calcutta

It is now possible to give some details of the outbreak of cholera which began in Calcutta early in March (April 29, p. 1015). In the first fifteen weeks of 1950, that is, between January 1 and April 15, 3,311 cases of cholera and 1,233 deaths due to cholera were reported. In the last four weeks—between March 19 and April 15—there have been 1,768 cases and 705 deaths. The following weekly figures indicate the development of the outbreak:

Week ended	*Cases*	*Deaths*
March 11	199	62
March 18	253	105
March 25	312	114
April 1	365	136
April 8	406	183
April 15	685	272

This appears to be the most serious outbreak of the disease since 1943, when 7,007 cases occurred in Calcutta. The first 15 weeks of 1950 have provided in Calcutta an incidence little short of 50% of the record of 1943. Normally the Calcutta curve of incidence falls off sharply in July and August, with the coming of heavy rains. During the past thirty years the annual number of cholera cases in Calcutta has never fallen below 1,800. Apart from the seasonal rise in incidence, the influx of refugees appears to be a factor in the present outbreak.

Infectious Diseases in the First Quarter

During the first quarter of this year the incidence of the common infectious diseases, except in the case of scarlet fever, has been below the level of recent first quarters. Notifications of diphtheria have declined still further and are now at one-third of the level of three years ago and less than one-twentieth of the number recorded in the first quarter of 1938. Notifications of dysentery were much more numerous than usual because of outbreaks in Yorkshire, Durham, Lancashire, and Northumberland. The returns for poliomyelitis were also large. A comparison of the notifications in England and Wales during the last four first quarters shows these and other points.

	1947	1948	1949	1950
England and Wales:				
Scarlet fever	15,527	23,348	16,087	24,802
Whooping-cough	27,922	35,034	37,221	23,619
Diphtheria	2,832	2,466	1,523	955
Measles	165,895	88,489	201,140	54,568
Pneumonia	15,500	10,969	17,147	13,720
Dysentery	931	2,100	886	3,938
Typhoid and paratyphoid fevers	98	103	100	154
Poliomyelitis	125	417	245	512
Great Towns:				
Deaths from influenza	1,341	273	2,278	1,087

Quarterly Returns for Scotland

The birth rate during the last quarter of 1949 was 17.4 per 1,000. This is the lowest rate since 1945 and was 1.1 below the rate for the December quarter of 1948. The infant mortality rate was 44 per 1,000 registered births—the same as that for the corresponding quarter of 1948 but 11 below the five years' average. The general death rate was 12.2 per 1,000 and was 0.1 below the average of the five preceding fourth quarters. The death rate from all forms of tuberculosis was 63 per 100,000 and from respiratory tuberculosis 57. The former rate is 11 and the latter 10 below the rates for the corresponding quarter of 1948.

The preliminary return for the year 1949 shows that the birth rate at 18.5 per 1,000 was 0.9 below the average of the five preceding years. Infant mortality was 41 per 1,000 live births, and was the lowest rate ever recorded in Scotland. The general death rate was 12.3 per 1,000 and was 0.5 above the rate for 1948 but 0.1 below the five years' average.

Health of Scotland

The report of the Department of Health for Scotland and of the Scottish Health Services Council for 1949 shows that the improvement in the general health of the people has been maintained. The infant mortality, 41.4 per 1,000 live births, the maternal mortality of 1.3 per 1,000 births, and the general death rate at 12.3 per 1,000 were all record low rates. Respiratory tuberculosis, however, remained a major problem, although the death rate showed a 10% decline on the high values of the two preceding years; the number of new cases showed a further rise. There was a substantial and rapid fall in deaths and cases of non-respiratory tuberculosis.

Discussion of Table

In *England and Wales* there was an increase in the number of notifications of measles 2,401, whooping-cough 330, and scarlet fever 69, while the only decrease was 60 for dysentery. The largest variation in the local trends of scarlet fever was a decline of 23 notifications in Yorkshire West Riding. The only large rises in the notifications of whooping-cough were Warwickshire 95 and Middlesex 62. Large increases in the number of notifications of measles were reported from Durham 378, Kent 262, Lancashire 253, Yorkshire West Riding 123, Middlesex 119, Suffolk 117, Leicestershire 115, and Glamorganshire 91. The largest fluctuations in the local returns of diphtheria were a rise in London 5 and decreases in Lancashire 9 and Warwickshire 4. The largest returns for dysentery were Durham 83 (West Hartlepool C.B. 26, Stanley U.D. 16, Blaydon U.D. 14, South Shields C.B. 10, Whickham U.D. 8); Yorkshire West Riding 67 (Sheffield C.B. 22, Bradford C.B. 18, Leeds C.B. 14); Lancashire 42 (Middleton M.B. 10, Manchester C.B. 8); Essex 24 (Ilford M.B. 17); London 22 (Lewisham 11); Northumberland 18 (Newcastle-upon-Tyne C.B. 10); Yorkshire North Riding 12 (Middlesbrough C.B. 12); and Glamorganshire 9 (Cardiff C.B. 9).

In *Scotland* there was an increase in the notifications of infectious diseases, and rises were recorded for measles 32, scarlet fever 27, whooping-cough 23, dysentery 21, cerebrospinal fever 13, diphtheria 8. The chief centres of dysentery were Glasgow 58, Dundee 13, and Lanark county 8. All the cases of diphtheria were notified in the Western area.

In *Eire* increases in the number of notifications of scarlet fever 51 and whooping-cough 17 were the chief features of the returns. Fresh outbreaks of whooping-cough were reported from Meath, Dunshaughlin R.D. 15, and Wicklow, Bray U.D. 12. An increase in the incidence of scarlet fever occurred throughout the country. The notifications of measles rose by 14 in Dublin C.B., but declined in the remainder of the country.

In *Northern Ireland* decreases occurred in the notifications of scarlet fever 28 and whooping-cough 20. The former disease declined in most areas, while the fall in the latter was contributed by Belfast C.B. The notifications of measles declined by 50 in Belfast C.B. but rose in Antrim county 39 and Down county 20.

Week Ending April 22

Notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,164, whooping-cough 2,810, diphtheria 55, measles 6,805, acute pneumonia 659, dysentery 291, paratyphoid fever 1, and typhoid fever 1. The deaths from influenza in the great towns numbered 47.

No. 15

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended April 15.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1950 (a)	(b)	(c)	(d)	(e)	1949 (Corresponding Week) (a)	(b)	(c)	(d)	(e)
Meningococcal infection	30	4	22	1	1	39	4	21	5	1
Deaths		—	—				2	1		
Diphtheria	58	12	19	1	2	106	11	19	3	4
Deaths	—	—	—	—	—	—	—	—	—	—
Dysentery	303	22	99		1	63	11	23	1	—
Deaths		—							—	—
Encephalitis, acute	8	—		—	—	3	—	1	—	—
Deaths		—					—			
Erysipelas			27	6	3			25	10	6
Deaths							—			
Infective enteritis or diarrhoea under 2 years				16					43	
Deaths	16		3	—	—	25	1	4	2	3
Measles*	7,888	171	228	95	433	14,724	1753	386	194	193
Deaths†		—	—	1	—			1	1	—
Ophthalmia neonatorum	55	—	12	2	1	56	6	11	—	—
Deaths										
Paratyphoid fever	4	—	2(A)		—	5	—	—	—	—
Deaths	—		—			—	—	—	—	—
Pneumonia, influenzal	722	40	3	—	15	1,093	31	16	17	9
Deaths (from influenza)‡	56	5	1	6	1	192	5	5	—	2
Pneumonia, primary			173	¶				233	46	
Deaths	208	35		10	6	296	34		9	11
Poliomyelitis, acute	21	1	5	4	3	14	3	—	—	1
Deaths§	1	1		—		—	—			
Puerperal fever		—	7				—	5		
Deaths										
Puerperal pyrexia‖	85	2	8		2	96	11	6	1	2
Deaths							—			
Relapsing fever	—	—			—	—	—			—
Deaths										
Scarlet fever	1,385	100	179	96	76	1,191	65	193	108	38
Deaths†			—	—	—			—	—	—
Smallpox	—	—	—		—	4	—	—	—	—
Deaths					—				—	—
Typhoid fever	5	—	—	—	1	1	—	1	1	—
Deaths		—	—		—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths					—				—	—
Whooping-cough	2,457	110	299	86	40	2,608	171	222	111	104
Deaths	6	—	—	—	—	16	1	3	4	—
Deaths (0–1 year)	263	33	25	24	9	300	43	36	26	7
Deaths (excluding stillbirths)	5,133	809	618	220	118	5,778	781	610	200	133
Annual death rate (per 1,000 persons living)			12·4					12·2	12·4	
Live births	7,621	1224	946	467	245	7,672	1199	940	329	200
Annual rate per 1,000 persons living			19·0					18·9	20·4	
Stillbirths	205	25	29			183	27	32		
Rate per 1,000 total births (including stillborn)								33		

* Measles is not notifiable in Scotland, and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

‖ Includes puerperal fever for England and Wales and Eire.

¶ Primary pneumonia no longer notifiable in Eire.

Medical News

WORLD HEALTH

World Health Assembly

The United Kingdom's chief delegate to the World Health Assembly, which opens in Geneva on May 8, will be Dr. Melville D. Mackenzie, of the Ministry of Health. The other delegates will be Dr. Wilson Rae, deputy chief medical officer of the Colonial Office, and Mr. T. Lindsay, Ministry of Health. Accompanying them as advisers will be Sir John Charles, chief medical officer designate to the Ministry of Health, Sir Andrew Davidson, chief medical officer, Department of Health for Scotland, Mr. W. H. Boucher, Ministry of Health, Dr. R. H. Barrett, Ministry of Health, Mr. F. Mells, Ministry of Health, Dr. W. S. Maclay, Senior Commissioner of the Board of Control, Mr. A. E. Joll, General Register Office, Dr. Percy Stocks, chief medical statistician of the General Register Office, and Miss F. N. Udell, chief nursing officer, Colonial Office. Dr. Barrett is acting as secretary to the delegation. Dr. Melville Mackenzie will also attend a meeting of the executive board of the World Health Organization, which will follow the World Health Assembly.

Research into Antibiotics

A committee on antibiotics set up by the World Health Organization has recommended that W.H.O. sponsor research and grant fellowships for the study of antibiotics. It is also suggested that type culture collections be formed. The following are the members of the committee: Professor E. Chain, F.R.S., Professor Ronald V. Christie, Professor M.-M. Janot, Professor Hugo Theorell, Professor Selman A. Waksman. Secretary: Dr. Melanie Craipeau.

Yaws in Indonesia

Professor Kenneth R. Hill, of the University College of the West Indies, has been sent by W.H.O. to Indonesia to investigate and treat yaws. It is estimated that 15% of the population of 60,000,000 in Java suffer from the disease, one-half of those affected being children. Professor Hill will send back strains of treponema from cases of yaws to Professor T. B. Turner, of the Johns Hopkins University, Baltimore, for comparison with those from other parts of the world.

Membership of W.H.O.

Indonesia and Viet Nam have applied for membership of the World Health Organization, and an application for associate membership has been made by Great Britain on behalf of Southern Rhodesia. Czechoslovakia and Albania have recently withdrawn from W.H.O., following the example of the U.S.S.R., Byelorussia, the Ukraine, Bulgaria, and Rumania.

X-ray Examination of School-children

The Cambridge Chest Radiography Unit, in conjunction with the school health service, proposes to *x*-ray in May Cambridge school-children aged 12 years and upwards. Normal results will be sent to parents; otherwise the parents will receive a letter from the unit asking them to take the children to their own family doctor, a full report being sent to the doctor so that he may make any arrangements he considers advisable.

Oliver Memorial Fund

The committee of the Oliver Memorial Fund intends to make the third award of the value of £50 to a British subject whose orginal work or service in connexion with blood transfusion is considered to be a notable contribution to the research, organization, or donor aspect of this subject. The committee will welcome applications and, in addition, communications drawing its attention to suitable candidates. Applications must be submitted before June 30 and should be sent to the honorary treasurer, Mr. F. W. Mills, National Provincial Bank, Ltd., Holborn Circus, London, E.C.1, to whom all correspondence should be addressed.

Aureomycin and Chloromycetin

On the advice of the Medical Research Council the Ministry of Health has decided to extend the distribution of these antibiotics for the treatment of the following additional conditions:

Aureomycin.—Severe staphylococcal infections which have proved resistant to penicillin in adequate doses.

Chloromycetin.—Acute laryngotracheo-bronchitis in infants.

For these conditions the two antibiotics will be made available for the treatment of cases in hospital only.

The Association of British Pharmaceutical Industry

The problems of the pharmaceutical industry were discussed at the annual dinner of the Association of the British Pharmaceutical Industry, held at the Dorchester Hotel on April 19. Mr. Hugh Linstead, M.P., proposing the toast to the association, mentioned three of the most important problems—bulk buying by the Ministry of Health, attempts to discourage the prescription of proprietary drugs, and the revival of the German pharmaceutical industry. He pointed out that it was impossible to develop an overseas market for proprietary drugs and to restrict the home trade at the same time. The pharmaceutical industry was a necessity for the country, and a true partnership should be developed between Ministries and industries. Mr. R. L. Taylor, president of the association, said in his reply that the State was the biggest customer of the industry, and he paid a tribute to the Civil Servants with whom the industry had to deal. Mr. C. L. Saul proposed the health of the guests, and Mr. J. Davidson Pratt replied.

Preservatives Regulations

The annual report for 1949–50 of the Food Group of the Society of Chemical Industry states that last year a joint committee of Representatives of the Food Group and of the Society of Public Analysts and Other Analytical Chemists was set up to investigate the desirability of, or the need for, a revision of the 1925 Preservatives Regulations. The committee has prepared a memorandum, which is to be submitted by both societies to the Ministers of Food and Health.

Scottish General Nursing Council

The new and enlarged General Nursing Council provided for under the 1949 Nurses (Scotland) Act will take office on December 1. An order to this effect has been made by the Secretary of State for Scotland. The new council will consist of 26 members. Thirteen of the members will be registered nurses working in Scotland and elected by the nurses themselves. Eleven of the remainder will be elected by the Secretary of State for Scotland, and two by the Privy Council. It will be the duty of the council to keep a *Register* of trained nurses. It will have power to approve nurse-training institutions, to regulate the conduct of examinations, and to prescribe the conditions of admission to the *Register.*

Lecturing in Spain

Dr. W. S. C. Copeman has accepted the invitation of the Faculty of Medicine of the University of Barcelona to attend the opening of a department of rheumatism on May 10 and to deliver a short course of lectures.

Foreign Member of Royal Society

Professor Carl Ferdinand Cori has been made a Foreign Member of the Royal Society. Distinguished for his work on metabolism of carbohydrates in the animal body, Professor Cori has been Professor of Pharmacology and Biochemistry in the Washington University School of Medicine, St. Louis, U.S.A., since 1931. In 1948 he was awarded the Nobel Prize in medicine and physiology jointly with his wife, Dr. G. T. Cori.

Roffey Park

By a Statutory Order made by the Minister of Health, Roffey Park Rehabilitation Centre has ceased to be included in the St. Thomas's Hospital group of hospitals (National Health Service (Designation of Teaching Hospitals—St. Thomas's Hospital) Order, 1950).

COMING EVENTS

Hospital Administrators

The Annual Conference of the Institute of Hospital Administrators will be held in London on May 5–6, and will be opened by the Minister of Health. Particulars may be obtained from the institute at Tavistock House North, Tavistock Square, London, W.C.1.

Manchester Golf

The annual competition of the Manchester and District Medical Golfers' Association will be held on the course at Mere, Cheshire, on Wednesday, May 17. Particulars should be obtained from the honorary secretaries, Manchester and District Medical Golfers' Association, c/o B.M.A. Regional Office, 33, Cross Street, Manchester, 2.

Faculty of Radiologists

The annual meeting of the Faculty of Radiologists will be held at the Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C., on Friday, May 19, at 2.30 p.m., and at 3.30 p.m. Dr. Cecil G. Teall will deliver the Skinner Lecture on "Malignant Disease in Childhood from the Viewpoint of the Diagnostic Radiologist." The annual dinner of the Faculty will be held at the College at 7 for 7.30 p.m.

Simpson-Smith Lecture

The Institute of Child Health has arranged for the Alex. Simpson-Smith Lecture for 1950 to be given by Professor Ph. Sandblom, associate professor of surgery, Karolinska Institutet, Medical School, Stockholm, at the Hospital for Sick Children, Great Ormond Street, London, W.C., on Thursday, May 25, at 5 p.m. His subject is "Factors Influencing the Rate of Wound Healing." Admission is by ticket only, obtainable from the dean of the institute at the hospital.

Port Health Authorities Annual Meeting

The Association of Sea and Air Port Health Authorities of the British Isles will hold its annual meeting at Grimsby on June 7, 8, and 9, under the presidency of Councillor A. E. Kelham, chairman of Grimsby Port Health Committee. The following subjects will be discussed: "The medical procedure at Northolt Aerodrome, with special reference to the Aircraft Regulations, 1950," by Dr. L. Thomas; "Some aspects of port health work in Grimsby," by Mr. J. D. Syme; "The teamwork of port hygiene," by Dr. A. B. Semple; "The fishing industry and ancillary activities," by Mr. H. W. Wilson; "Ship construction in relation to hygiene," by Mr. J. P. Allan; "Medical services in docks," by Dr. G. Buchanan. Further particulars may be obtained from the honorary secretary of the association, Dr. H. C. Maurice Williams, Health Department, Civic Centre, Southampton.

Fertility

A conference on fertility, which it is proposed will be the inaugural meeting of a new society for the study of comparative fertility, will be held at the house of the Zoological Society of London on June 16–17. Further particulars may be obtained from Dr. G. I. M. Swyer, Obstetric Hospital, University College Hospital, Huntley Street, London, W.C.1.

SOCIETIES AND LECTURES

Saturday

INSTITUTE OF LARYNGOLOGY AND OTOLOGY, 330, Gray's Inn Road, London, W.C.—May 6, 11.30 a.m., *"Examination and Treatment of Children, Particularly those of School Age,"* by Mr. H. Forster.

Monday

DURHAM UNIVERSITY.—At Royal Victoria Infirmary, Newcastle-upon-Tyne, May 8, 5.15 p.m., *"Surgical Relief of Intractable Pain,"* Rutherford Morison Lecture by Dr. J. C. White (*Change of date*).

EDINBURGH UNIVERSITY.—At Physiology Lecture Theatre, University New Buildings, Teviot Place, May 8, 5 p.m., *"The Geographical Factor in History,"* by Dr. Douglas Guthrie.

INSTITUTE OF LARYNGOLOGY AND OTOLOGY, 330, Gray's Inn Road, London, W.C.—May 8, 1.30 p.m., *"The Treatment of Facial Paralysis,"* by Miss D. J. Collier.

INSTITUTE OF PSYCHIATRY (UNIVERSITY OF LONDON), Maudsley Hospital, Denmark Hill, London, S.E.—May 8, 4.30 p.m., *"Brain Metabolism and Activity"* (Part II), by Dr. H. McIlwain.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W.—May 8, 8.30 p.m., annual general meeting; 8.45 p.m., *"Observation, its Meaning and Importance,"* Annual Oration by Sir Henry Souttar.

UNIVERSITY COLLEGE (Physiology Theatre), Gower Street, London, W.C.—May 8, 4.45 p.m., *"Genetics and Biochemistry,"* by Professor J. B. S. Haldane, F.R.S.

WRIGHT-FLEMING INSTITUTE OF MICROBIOLOGY, St. Mary's Hospital Medical School, Paddington, W.—May 8, 5 p.m., *"Recent Developments in the Study of Carcinogenesis,"* by Professor A. Haddow.

Tuesday

CHELSEA CLINICAL SOCIETY.—At South Kensington Hotel, Queen's Gate Terrace, London, S.W., May 9, 7 for 7.30 p.m., annual dinner.

INSTITUTE OF DERMATOLOGY, Lisle Street, Leicester Square, London, W.C.—May 9, 5 p.m., *"The Scleredermas,"* by Dr. G. B. Dowling.

INSTITUTE OF LARYNGOLOGY AND OTOLOGY, 330, Gray's Inn Road, London, W.C.—May 9, 1.30 p.m., *"The Respiratory Tract in Infectious Diseases,"* by Dr. E. H. R. Harries.

LONDON JEWISH HOSPITAL MEDICAL SOCIETY.—At Rose Hertz Hall, Woburn House, Upper Woburn Place, London, W.C., May 9, 8.30 p.m., *"Disease of the Newborn Baby,"* by Professor A. Moncrieff.

LONDON UNIVERSITY.—At London School of Hygiene and Tropical Medicine, Keppel Street, Gower Street, W.C., May 9, 5.30 p.m., *"The General Pathology of Virus Infection,"* by Professor F. M. Burnet, F.R.S. (University of Melbourne).

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W.—May 9, 5 p.m., *"The Patient and His Disease,"* Croonian Lecture by Dr. A. E. Clark-Kennedy.

ROYAL EYE HOSPITAL (KING'S COLLEGE HOSPITAL GROUP), St. George's Circus, London, S.E.—May 9, 5 p.m., *"Science and Art of Refraction,"* by Dr. T. H. Whittington.

Wednesday

CAMBRIDGE UNIVERSITY.—At Addenbrooke's Hospital, Cambridge, May 10, 2.30 p.m., *"The Doctor and the Common Law,"* by Mr. T. Ellis Lewis, Ph.D.

EDINBURGH UNIVERSITY.—At University New Buildings (Surgery Lecture Theatre), Edinburgh, May 10, 5 p.m., *"Neurosurgical Experience in the Treatment of Intractable Pain,"* Macarthur Post-graduate Lecture by Dr. James C. White (Harvard Medical School).

INSTITUTE OF LARYNGOLOGY AND OTOLOGY, 330, Gray's Inn Road, London, W.C.—May 10, 9.30 a.m., *"The Relationship of Dental Disease to Diseases of the Throat, Nose, and Ear."* (Illustrated by lantern slides), by Mr. A. C. Deverell.

INSTITUTE OF PSYCHIATRY (UNIVERSITY OF LONDON), Maudsley Hospital, Denmark Hill, London, S.E.—May 10, 4.30 p.m., lecture-demonstration for postgraduates by Dr. Denis Hill.

LONDON COUNTY MEDICAL SOCIETY.—At Highlands Hospital, Winchmore Hill, London, N., May 10, 3 p.m., clinical meeting.

ROYAL EYE HOSPITAL (KING'S COLLEGE HOSPITAL GROUP), St. George's Circus, London, S.E.—May 10, 5.30 p.m., *"Ophthalmic Neurology,"* by Mr. L. H. Savin.

SOCIETY FOR PSYCHICAL RESEARCH.—At Caxton Hall, Westminster, London, S.W., May 10, 8.30 p.m., *"Telepathy and Human Personality,"* Myers Memorial Lecture by Professor J. B. Rhine (Duke University, North Carolina).

SOUTH-WEST LONDON MEDICAL SOCIETY.—At Bolingbroke Hospital, Wandsworth Common, London, S.W., May 10, 8.30 p.m., demonstration of clinical cases by honorary medical staff.

Thursday

HONYMAN GILLESPIE LECTURES.—At Anatomy Theatre, University New Buildings, Teviot Place, Edinburgh, May 11, 5 p.m., *"Recent Developments in Venereology,"* by Dr. R. C. L. Batchelor.

INSTITUTE OF DERMATOLOGY, Lisle Street, Leicester Square, London, W.C.—May 11, 5 p.m., *"Skin Diseases Caused by Light,"* by Dr. Brian Russell.

INSTITUTION OF ELECTRICAL ENGINEERS, Savoy Place, London, W.C.—May 11, 5.30 p.m., *"The Analysis of Action Potentials in Electromyography,"* by Dr. P. Bauwens.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, London, S.W.—May 11, 5 p.m., *"The Patient and His Disease,"* Croonian Lecture by Dr. A. E. Clark-Kennedy.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, London, W.C.—May 11, 5 p.m., *"Ruptures of the Rotator Cuff,"* Hunterian Lecture by Professor H. F. Moseley.

ROYAL EYE HOSPITAL (KING'S COLLEGE HOSPITAL GROUP), St. George's Circus, London, S.E.—May 11, (1) 4.45 p.m., *"Visual Fields: Normal and Pathological,"* by Mr. C. Taylor; (2) 5.30 p.m., *"Operative Surgery,"* by Miss J. M. Dollar.

ROYAL SOCIETY, Burlington House, Piccadilly, London, W.—May 11, 8.30 p.m., conversazione.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL, Hyde Park Corner, London, S.W.—May 11, 4.30 p.m., *"Neurology,"* lecture-demonstration by Dr. Denis Williams.

Friday

BRITISH ASSOCIATION OF PHYSICAL MEDICINE.—At Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C., May 12, 5 p.m., annual general meeting; 5.30 p.m., *"The Work of the Baruch Committee,"* by Dr. F. H. Krusen (Mayo Clinic); 7 for 7.30 p.m., annual dinner at the College.

LONDON UNIVERSITY.—At University College (Anatomy Theatre), Gower Street, W.C., May 12, 5.30 p.m., *"The Cytology and Histochemistry of the Uterus and Placenta,"* by Professor G. B. Wislocki (Harvard University).

MAIDA VALE HOSPITAL FOR NERVOUS DISEASES MEDICAL SCHOOL, Maida Vale, London, W.—May 12, 5 p.m., clinical neurological demonstration, by Dr. Douglas McAlpine.

ROYAL EYE HOSPITAL (KING'S COLLEGE HOSPITAL GROUP), St. George's Circus, London, S.E.—May 12, 4.15 p.m., *"Pathology,"* by Miss M. Savory.

Saturday

SOUTH-EAST METROPOLITAN REGIONAL TUBERCULOSIS SOCIETY.—At Kettlewell Hospital, Swanley, Kent, May 13, 10.30 for 11 a.m., *"Is Your Pneumoperitoneum Really Necessary?"* by Dr. E. L. Sandiland.

APPOINTMENTS

BOLTON, REGINALD, M.B.E., M.B., M.R.C.P., Consultant Physician, Epsom District Hospital.

HUNTER, ROBERT M. M., M.B., M.R.C.P.Ed., D.P.H., D.P.M., Consultant Psychiatrist, The Pastures Hospital, Mickleover, Derby.

MOTTERSHEAD, S., M.D., F.R.C.S., Assistant Surgeon, Tees-side Group of Hospitals, Middlesbrough.

TYRER, F. H., M.R.C.S., L.R.C.P., D.I.H., Industrial Medical Officer, West Midlands Gas Board.

BIRTHS, MARRIAGES, AND DEATHS

BIRTHS

Donald.—On April 16, 1950, at St. Catherine's, Stanely Road, Paisley, to Mary (formerly Graham), M.B., B.S., wife of Patrick C. Donald, L.D.S., a son.

Maughan.—On April 25, 1950, at Corbridge Maternity Hospital, to Rebe Monica (née Hastings), M.A., D.Th.P.T., wife of John H. Maughan, M.B., B.S., D.P.H., a daughter.

Price.—On April 26, 1950, at "Ryecroft," Panteg, Mon., to Kathleen (formerly Fenelon), S.R.N., wife of Squadron Leader W. Leslie Price, R.A.F., retired, a son—John Michael

Tweedie.—On March 31, 1950, at the European Hospital, Rabaul, New Britain, to Gay, wife of G. C. Tweedie, M.B., F.R.C.S.Ed., twin sons—James and John.

Zorab.—On April 22, 1950, to Janet (née Baillie), wife of Edward C. Zorab, M.B., B.S., D.O M.S., of 20, Brunswick Place, Southampton, a son.

DEATHS

Appleton.—On April 22, 1950, at St. Thomas's Hospital, Arthur Beeny Appleton, M.D., of Little Stowe, Mark Way, Godalming, aged 61.

Balfour.—On April 18 1950, at Aviemore, Inverness-shire, Archibald Craig Balfour, L.R.C.P.&S.Ed.

Beach.—On April 17, 1950, at 24, Buxton Road, Weymouth, Henry William Beach, M.R.C.S., L.R.C.P., D.P.H., late of Hurstpierpoint, Sussex, aged 78.

Bowden.—On April 19 1950, at a Boscombe nursing-home, Reginald Treacher Bowden, M.D., of San Remo Towers, Boscombe, Hants, late of Rochford, Tenbury, Warwicks, and Ramsgate, aged 89.

Bower.—On April 24, 1950, John Alexander Bower, M.B., C.M., of Bramleigh, Cleeve Hill, Cheltenham, aged 83.

Deeping.—On April 20, 1950, George Warwick Deeping, M.B., of Eastlands, Weybridge, Surrey, aged 72.

Dunlop.—On April 26, 1950, at Edinburgh, Robert Hunter Dunlop, M.B., Ch.B., D.P.H.

Gordon.—On April 26, 1950, at Bath, Ronald Gray Gordon, M.D., D.Sc., F.R.C.P.Ed., Colonel, late R.A.M.C.

Harvey.—On April 27, 1950, Sidney Estridge Harvey, M.R.C.S., L.R.C.P., of 107, Blendon Road, Bexley, Kent.

Holthusen.—On April 20, 1950, Alan William Holthusen, M.B., B.S., of 5, Crowstone Road, Westcliff-on-Sea, Essex, aged 64.

Hope.—On April 27, 1950, at "Coppice," Caldy, Cheshire, Edward William Hope, O.B.E., M.D., D.Sc., aged 95.

Hutchinson.—On April 20, 1950, Roger Jackson Hutchinson, M.R.C.S., L.R.C.P., of Meadland, Haslemere, Surrey.

Joscelyne.—On April 17, 1950, at Wellington Hospital, Arthur Edwin Joscelyne, M.D., of Crooms Hill, West Monkton, Taunton, aged 83.

Kemp.—On April 18, 1950, at Beech Grove, Castleford, Yorks, William Kemp, M.B., C.M.

Le Quesne.—On April 14, 1950, at 6, Victoria Square, Clifton, Bristol, Ferdinand Simeon Le Quesne, V.C., M.R.C.S., L.R.C.P., Lieutenant-Colonel, R.A.M.C., retired, aged 86.

Manson.—On April 17, 1950, David Manson, M.B., Ch.B., late of Assam, aged 66.

Martin.—On April 17, 1950, at 1, Lansdowne House, Didsbury, Manchester, Ernest Martin, M.B., B.S., late of 6, Rusholme Gardens, Manchester.

O'Hea.—On April 17, 1950, at 106, Park Lane, Croydon, James Patrick O'Hea, M.B., F.R.C.S., aged 82.

Paterson.—On April 19, 1950, at "Padley Rise," Grindleford, Sheffield, Hugh Gordon Paterson, M.R.C.S., L.R.C.P.

Poole.—On March 25, 1950, at Bristol, Frederick William Poole, M.B., Ch.B., aged 59.

Rodd.—On April 16, 1950, at Willowby House, Yelverton, Devon, Arthur Rodd, M.R.C.S., L.R.C.P., Captain, R.A.M.C., retired, aged 55.

Somerset.—On April 19, 1950, at 10, Donnington Square, Newbury, Berks, Edward Somerset, M.R.C.S., L.R.C.P., aged 86.

Taylor.—On April 15, 1950, Harman Taylor, M.R.C.S., L.R.C.P., of 27, Rodney Street, Liverpool.

Wakely.—On April 21, 1950, at Creech St. Michael, Taunton, Somerset, Alfred Stewart Wakely, *M.C.*, M.B., B.S., D.P.H.

Whelan.—On April 20, 1950, at Skegness, Lincs, John Benjamin Buchanan Whelan, M.D., aged 68.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Vaccination in Infancy

Q.—*What is the best method of sterilizing the needle used for vaccination? In infants aged about 4 months, who show no local reaction following two attempts with lymph which has successfully vaccinated others, are we to assume that this is due to passive immunity derived from the mother? What proportion of infants may be expected to show it, and how long does it persist? Should a further attempt or attempts be made in infancy, and if so at what age? If an individual who thus fails to "take" in infancy has to be vaccinated during the school period, adolescence, or adult life, is the procedure to be considered as "primary vaccination" with its attendant risks, or is it in this respect equivalent to "revaccination"? Could you give me any references on these points?*

A.—The needle used for vaccination should be of the triangular Hagedorn type and is best sterilized by dipping in spirit and flaming off the excess, or the needle may be boiled in water for one to two minutes in a test-tube over a spirit lamp. Vaccination should be performed by the multiple pressure method (see December 24, 1949, p. 1483). If vaccination of a child of 4 months has failed with lymph that has been kept in proper condition it may be assumed that the child has some degree of passive immunity acquired from the mother. In such a case vaccination should be repeated some time between 6 and 12 months of age. In some countries primary vaccination is done at 1 year of age, and in others just before going to school, but it is rare for infants to be refractory to vaccination at 4 months, which in this country is regarded as the optimum age for vaccination. If any attempt to vaccinate a baby fails, the first subsequent successful vaccination, no matter at what age, is regarded as the primary vaccination. It is, however, undesirable to wait until the child is of school age before primary vaccination is undertaken, because the reaction tends to be more severe and there is a slight risk of encephalitis as a complication. There is a useful article on "Vaccination Against Smallpox" in the *Ministry of Health Monthly Bulletin*, 1947, **6**, 169.

Anovulatory Menstruation and Sterility

Q.—*How should one treat anovulatory menstruation in a case of infertility in which all possible local causes have been excluded?*

A.—Various methods, hormonal and radiotherapeutic, are used in an attempt to produce ovulation, but the results have rightly been described as "variable, questionable, and unconvincing." This is particularly true in the case of women who are having regular uterine bleeding. Two alternative lines of hormone therapy appear to offer the best hope in such cases:

(*a*) Ten daily intramuscular injections of 500 i.u. serum gonadotrophin (F.S.H.), followed by 10 daily intramuscular injections of chorionic gonadotrophin (L.H.). This 20-day course is started on the third or fourth day of the cycle, the first day of a period being counted from, and should not be given during more than two successive cycles. If it occurs at all, ovulation is most likely on the first or second day after the change over from one preparation to the other, and coitus should be timed accordingly.

(*b*) Stilboestrol, 1 mg. t.d.s. by mouth, on the eleventh, twelfth, and thirteenth days of a 28-day cycle might "shock" the pituitary into releasing the luteinizing factor necessary for precipitating ovulation. Other and more complicated techniques using ovarian hormones by reason of their power to react on pituitary function are also described, one of the latest being that presented by G. I. M. Swyer (*British Medical Journal*, March 18, p. 626; see also the correspondence on this paper: April 15, p. 901; April 29, p. 1007). Swyer's technique as it stands, however, is more easily applied to the patient suffering from absence of both ovulation and menstruation.

Miliaria Rubra

Q.—*In the treatment of miliaria rubra and tropical anhidrosis, what are the most effective keratolytic agents? Many cases have responded very poorly to applications of 10% salicylic acid in 90% alcohol. The acute miliarial phase was apparently converted into the anhidrotic stage of the disease by this treatment.*

A.—The avoidance of soap and water, powders, and spirituous applications or anything likely to deprive the skin of its sebaceous secretions is advised in the treatment of miliaria rubra and tropical anhidrosis. The use of lanolin or oils is recommended. According to O'Brien (*Brit. J. Derm. Syph.*, 1947, **59**, 125) it is degreasing of the skin by soap and water, toilet powders, spirit lotions, and the like which causes obstruction of the sweat orifices by the formation of a keratin ring. The use of oils prevents this. The work of O'Brien has been confirmed by many other investigators and the studies by Sulzberger and his colleagues in New York support O'Brien's view. It would seem that to use any keratolytic agent such as salicylic acid in an alcoholic medium is bound to produce bad results. The essence of O'Brien's work, it must be repeated, is that keratinizing of the skin results from degreasing of the skin by toilet particularly and the use of spirituous lotions (against insects, etc.). On that basis one would certainly expect that the use of anything in 90% alcohol applied thrice daily would promote miliaria and anhidrosis.

Prevalence of Peptic Ulcer

Q.—*Is it a fact that gastric ulcers and allied troubles are on the increase? I should be grateful for statistics on this point and for references to the literature.*

A.—In answering this question it is necessary to understand the changes that have taken place during the century in the prevalence of gastric and duodenal ulcer and their complications. During the early years of the century acute gastric ulcers, causing haematemesis and perforation, were common in young women and they formed a high proportion of the cases admitted to hospital. During the 1914–18 war gastric and duodenal ulcers were relatively uncommon causes for invaliding out of the Army, but after the war there was a great increase in both gastric and duodenal ulcer in men and, as judged by mortality rates, particularly in men over 40. By this time the acute ulcers in young women had virtually disappeared. To-day they are seldom seen. The increase in the incidence of peptic ulcer after the first world war continued until 1930, when the curve flattened out but remained at the same high level. There was a further increase at the beginning of the 1939–45 war. By now, peptic ulcer had become a major medical problem in the armed Forces. Knowledge of these statistical changes may be derived from a study of the death rates from peptic ulcer in Great Britain as analysed by Tidy (*British Medical Journal*, 1944, **1**, 677). In 1940 a comprehensive historical survey of cases of perforated peptic ulcer, stressing the changing age and sex distribution between 1901 and 1935, was published by Jennings (*Lancet*, 1940, **1**, 395 and 444).

There are many fallacies in the analysis of death rates, and both improved diagnosis and improved treatment may make the interpretation of the figures very difficult. Perhaps the best evidence for an absolute increase comes from the studies by Illingworth and his colleagues (*British Medical Journal*, 1944, **2**, 617 and 655). They analysed the admissions of cases of acute perforation to all the Glasgow hospitals over a 20-year period, 1924–43, and related the figures to the changing population. There was a striking increase in duodenal ulcer, but, curiously enough, the figures for gastric perforations remained stationary. Whether or not the increase has continued over the past few years is not yet known for certain. The mortality figures have changed only slightly. With the

improved treatment of the major complications of perforation and haemorrhage a striking fall in the national figures might be expected, but this could have been offset by an absolute increase, and this point needs further study. Information is particularly needed on the incidence of gastric and duodenal ulcer in the population. Figures have been recently collected by R. Doll and F. Avery Jones (*Practitioner*, 1949, **162**, 44), but there are no previous figures for comparison with them. Further papers of interest in connexion with this problem come from Knutsen and Selvaag (*Acta med. scand.*, 1947, **128**, 341; Supplement, 196) and from Morris and Titmus (*Lancet*, 1944, **2**, 841); Gunner Altsted's book, *Studies on the Changing Incidence of Peptic Ulcer* (Oxford University Press, London, 1939), should also be consulted.

Beryllium Alloy

Q.—*I am industrial M.O. to a factory using and machining "Mallory 73 beryllium copper," of which the beryllium content is 2%. In view of the recent scare about the dangers of beryllium in certain circumstances, is there any danger attached to handling this alloy?*

A.—The toxicity of some beryllium salts is by now well known. Aub and Grier (*J. industr. Hyg.*, 1949, **31**, 123) have reported cases of acute pneumonitis in America in workers in a metallurgical laboratory engaged in the melting, casting, machining, grinding, and welding of very pure metallic beryllium. The health hazard arising from the machining of a 2% beryllium copper alloy would not be in the same category, but it is not advisable to take any risks where beryllium is involved. Dust from such operations should be prevented by mechanical means from entering the air of the workroom, and proper arrangements should be made for the ultimate safe disposal of contaminated dust and of waste material. Injuries to the skin from such material may be followed by the development of granulomata. The medical control of beryllium poisoning is well described in the *J. industr. Hyg.*, 1949, **31**, 227.

Premenstrual Frequency of Micturition

Q.—*What are the causes of frequency of micturition starting ten days before each menstrual period in an unmarried woman of 30? Pelvic examination and analysis of the urine are negative. Function is quite normal again after each period.*

A.—Some frequency of micturition, mostly diurnal, commonly occurs premenstrually, and is to be regarded as normal. It is generally said to be brought about by the increased pelvic congestion and the consequent slight enlargement of the uterus. Another possible explanation is a disturbance of the autonomic nervous system associated with the menstrual cycle. This is manifested in some individuals by a change in bowel function, either constipation or diarrhoea, just before menstruation. The case described may represent an exaggeration of the normal state of affairs, but organic enlargement of the uterus should be excluded. In an unmarried woman it can be difficult to exclude some lesion such as a small fibroid adjacent to the trigone of the bladder. The history is typical of some condition such as this, especially if the symptoms have developed only recently.

Anterior Sclero-uveitis

Q.—*What is the present view of the causes of anterior scleritis? What investigations and treatment are necessary, and what is the prognosis?*

A.—Anterior scleritis would perhaps be better termed anterior sclero-uveitis. The determination of the cause is always a difficult matter, since so many factors have been found to be responsible. Gout, rheumatism, syphilis, metabolic upsets, tuberculosis, and an allergic reaction to some infection are the usual causes. Since allergy is probably the commonest cause, investigation of the patient's allergic reactions should be undertaken. The inflammation of scleritis tends to spread and may last for years with exacerbations, and may result in a destructive uveitis, sclerosing keratitis, and finally glaucoma. Treatment should include rest, good food, gentle exercise, fresh air, colchicum with potassium iodide by mouth, protein shock therapy, diaphoresis, local heat, leeches, and atropine. General ultra-violet light baths may be given, with the usual precautions to protect the eyes.

Chronic Oedema of the Ankles

Q.—*What investigations and what treatment are called for in a case of chronic swelling of ankles for which there appears to be no cause?*

A.—It is a common experience to see patients with chronic oedema of the ankles for which no local or general cause can be found. The greater number of such cases are examples of the condition sometimes called "trophoedema" or, when a family history of a like affliction can be elicited, the Nonne-Meige-Milroy disease. There seems to be no true distinction between the hereditary and non-hereditary types. Although this type of oedema has often been attributed to lymphatic obstruction, secondary to lymphangitis, there is reason to believe that the oedema itself is the primary disorder and that it predisposes to recurrent attacks of cellulitis. Its cause is unknown; it is far commoner in women than in men, and appears most often either at puberty or at the menopause. Treatment is disappointing; the only measures at all effective are elevation of the foot of the bed and the wearing of elastic stockings. Two papers on chronic unexplained oedema that might be consulted are those of Whitfield and Arnott (*Lancet*, 1949, **2**, 225) and Braham and Howells (*British Medical Journal*, 1948, **1**, 830).

War Gases and Chronic Bronchitis

Q.—*Is gassing in the first world war responsible for the chronic pulmonary bronchitis and fibrosis seen in "gassed" cases at the present time?*

A.—It is unlikely that lung irritant gases are directly responsible for the changes mentioned. In the more severe gas casualties, however, bronchopulmonary infection was a common complication, and such secondary bronchitis or bronchopneumonia was followed in some instances by a residual bronchiectasis, with or without pulmonary fibrosis. Thus permanent damage might well result from exposure to gas. Nevertheless it is well to remember that chronic bronchitis is a common complaint in those not exposed, and there is no reason to suppose that a history of being gassed necessarily means that chronic bronchitis should be attributed to this cause.

NOTES AND COMMENTS

Viper Bites in Britain.—Dr. JOHN D. WHITESIDE (Chichester, Sussex) writes: In answer to a question on the treatment of viper bites ("Any Questions?" April 15, p. 917) the writer states that the bite of *Vipera berus* is relatively harmless and could cause serious damage only to small children, and then rarely. He also states that antivenins are rarely indicated, if ever, for viper bites in Britain. This has not been the experience in West Sussex. Vipers are frequently found on the commons around Midhurst and Petworth, and most of the hospitals in this area see occasional cases of viper bites. In children the condition can be very dangerous—the son of one of the medical staff of our hospital only just surviving such an injury after vigorous local treatment and antivenin. In adults also the condition can be critical. A German prisoner of war, aged 24, was admitted in a very collapsed state following a bite on the leg. No local treatment had been given and his life was probably saved by antivenin. Antivenin, 10 ml. intramuscularly, can have a dramatic effect on these patients. This is prepared by the Institut Pasteur of Algiers and supplied through the public health laboratories.

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